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Lewellys Barker's Clinics

AT THE UNIVERSITY OF CALIFORNIA—BEING THE JULY NUMBER OF THE MEDICAL CLINICS OF NORTH AMERICA

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MORRIS FISHBEIN, M.D.

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ERYSIPELAS

A COMPARATIVE STUDY OF THE MORE RECENT METHODS OF TREATMENT *

WALTER H. UDE, M.D.
AND
E. S. PLATOU, M.D.
MINNEAPOLIS

Dissatisfaction with the results obtained by topical applications in the treatment of erysipelas has led to the investigation of various other methods. Three of these may be considered of major importance, namely, (1) roentgen irradiation; (2) ultraviolet irradiation; (3) intramuscular injection of a specific antitoxin. We have used these methods to a considerable extent. We were at first favorably impressed with the effects of roentgen irradiation. Certain disadvantages, such as the inherent dangers, the expense, the lack of proper facilities in all communities, and the necessity that this form of treatment be given under the supervision of a trained radiologist, have induced us to try to find other methods. The use of antitoxin has certain disadvantages, such as the expense, the necessity for repeated injections, and the dangers of sensitization and serum reactions. Ultraviolet irradiation has none of the objectionable features of the other methods, while it seems to excel them in effectiveness. We are now using ultraviolet radiation in all of our cases of erysipelas.

Since the publication of the work of Platou and Rigler,[1] in 1926, there has been only one additional report on the effects of roentgen therapy in erysipelas, that by Harbinson and Lawson.[2] They treated eleven cases, using unfiltered radiation and a smaller dose than that advocated by Platou and Rigler, but with about the same results. Their dose is small enough so that it can be easily repeated without danger. This method has also been used by Leddy and Ford[3] of the Mayo Clinic. They report good results in most cases but find that unfiltered radiation and small doses produce much the same results as the larger filtered doses. They have found some of their postoperative cases very retractable.

There has been little recent work published on the use of ultraviolet irradiation in erysipelas, and no reports except our own[4] are available in instances in which it has been used in an extensive series of cases. Becker[5] in Germany gives one and one-half skin erythema doses, leaving a wide margin about the area involved. The youngest patient treated and cured by him was 5 months old. Sampson,[6] in his textbook, is an enthusiastic advocate of this method. His technic of application and our own correspond closely. Stewart[7] also refers to this method as beneficial, but he does not seem to have had any extensive experience with the disease. Ide and his co-workers[8] at the Northern Pacific Hospital in St. Paul have employed the method for several years and were the first to call it to our attention. Their results are comparable to our own.

In the present discussion we are stressing the comparative results of roentgen and ultraviolet irradiation in erysipelas. We have made a comprehensive analysis of all the available data in 402 hospitalized cases. These have been classified according to the method of treatment employed, and the data have been so arranged that a fairly accurate comparison of the results can be made. All cases treated by the various methods were studied, with the exception of only a few in which the erysipelas was a complicating factor of other diseases from which the erysipelas picture could not be separated and in which the primary disease predominated the clinical course. We are omitting in this presentation a discussion of the clinical progress of the disease under the various forms of therapy, as this has been covered in previous publications.

Our group of controls comprises all the cases of erysipelas treated in the department of contagious diseases of the Minneapolis General Hospital during the years 1922, 1923 and 1925. We omitted the cases for 1924, as this was the year of the smallpox epidemic. This disease not only limited the number of admissions of patients with other conditions to the contagious wards but also was frequently complicated by erysipelas. Statistics on the 1924 cases are therefore difficult to analyze, and we thought that they had best be omitted. Our control cases were treated with magnesium sulphate and glycerin packs to the local lesions, other treatment being symptomatic.

The cases included in our series treated by roentgen irradiation are the hospitalized cases of the group previously reported by Platou and Rigler.[1] The technic has also been reported in detail. We used light filtration (2 mm. aluminum) and closely approached the mild skin erythema dose. A sufficient margin of normal skin was allowed, and several areas were exposed in order to reach the entire region involved. We are under the impression that a fairly large dose

* From the departments of roentgenology of the Minneapolis General Hospital and the University of Minnesota, and the department of contagious diseases of the Minneapolis General Hospital.

1. Platou, E. S., and Rigler, Leo: Roentgen-Ray Therapy in Erysipelas, Arch. Int. Med. **38**: 573 (Nov.) 1926.
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is needed to produce the desired results. The hair was carefully protected from excessive exposure, and, when the scalp was involved, lighter dosages were used. The eyes and eyebrows were protected.

The cases included in our series treated by ultraviolet irradiation were all hospitalized. We did not include any of the ambulatory cases or any of those treated in private practice, as we could not fit the data on these into a hospitalized series. For this type of treatment we use the quartz mercury vapor lamp. The burner is placed at 8 inches distance from the patient in order to get as large a concentration of the short wavelengths as possible. The exposure time varies with the efficiency of the lamp and is approximately twice the time required to produce a mild erythema on normal skin. This dose is below the vesiculating dose but produces a strong erythema. As the general efficiency of the lamp decreases with age, the exposure time must be increased. With a new burner we used four minutes as our exposure time, and now, with considerable deterioration of the burner, the time has been increased to ten or twelve minutes per area in order to secure the same therapeutic results. In infants or children we make allowance for the increased sensitivity of the skin by a smaller dosage. The eyeballs are carefully protected by black paper, but the eyebrows are not covered. A margin of one inch of normal skin beyond the raised edge of the diseased area is included in the field. If the scalp is involved, no attempt is made to protect any part of it. If the entire involved area is easily covered by one exposure, this completes the treatment. In bilateral facial involvement or in other locations in which one exposure will not reach well beyond the margins, two or three areas are exposed and these are permitted to overlap. The treatment is occasionally repeated two days later, and there is no contraindication to further repetition. However, we do not repeat the treatment unless there is definite extension. Local applications of magnesium sulphate solution or other substances are not necessary following irradiation, although they may be used for their soothing effect. All other treatment is symptomatic. We feel that the important factor in this method is a correct application of the technic at the time of the first treatment. A preliminary report on this method has recently been made by one of us.[4]

In our cases treated with erysipelas antitoxin, Lederle's or Squibb's products were used. We have not used the intravenous method, all injections having been made intramuscularly. Repeated dosages were given when necessary.

COMPARATIVE STUDIES

In our studies, we are placing major importance on the comparison of the following factors: (*a*) duration in days from treatment to absolutely normal temperature; (*b*) average time to normal symptoms; (*c*) average duration of the disease from treatment to the day of discharge from the contagious disease hospital; (*d*) average entire duration of the disease, namely, from onset to the day of discharge from the hospital; (*e*) extension of the disease after treatment.

In studying the temperature charts, one is tempted to take as the end-point the critical drop in temperature that usually takes place within the first forty-eight hours. However, we thought it safer to record the time at which there was no elevation of the temperature above the normal at any time during the day or any subsequent days, so that we could feel that there was no further toxic absorption. From this comparison of temperatures we excluded all cases in which the course was afebrile, as well as those that ended fatally.

The average time until the symptoms become normal would ordinarily denote the cure of the condition. However, it is a regulation of our department of contagious diseases to detain all patients with erysipelas for at least four days after a return to normal temperature. This factor is no doubt responsible for the wide variation between the average figure and the duration from treatment to discharge from the hospital.

TABLE 1.—*Comparative Study of Therapy in Four Hundred and Two Cases of Erysipelas*

	Method of Therapy					
	Magnesium Sulphate and Glycerin Pack	Roentgen Irradiation	Ultraviolet Irradiation	Antitoxin	Roentgen Irradiation and Antitoxin	Ultraviolet Irradiation and Antitoxin
When treated	1922, 1923, 1925	1/22/26 to 9/25/28	10/2/28 to 9/1/29	1/1/27 to 4/30/29	1/22/26 to 9/25/28	10/2/28 to 9/1/29
Number of cases treated	151	113	79	12*	26	21
Number and percentage of deaths	30 or 19.9%	15 or 13.3%	6 or 7.6%	0	4 or 15.4%	5 or 23.8%
Number and percentage of deaths due directly to erysipelas	27 or 17.88%	14 or 12.4%	5 or 6.3%	0	4 or 15.4%	5 or 23.8%
Number of recoveries	121	98	73	12	22	16
Average time to normal temperature	6.15 days	3.8 days	3.16 days	4.46 days	5.92 days	4.06 days
Average time to normal symptoms	8.65 days	5.32 days	4.5 days	5.46 days	7.37 days	6.41 days
Extensions after treatment	.....	29 or 25.8%	6 or 7.6%	2 or 18.2%	11 or 45.8%	3 or 14%
Average duration from treatment to discharge	11.53 days	8.63 days	8.2 days	9.42 days	12.66 days	11.82 days
Average duration from onset to discharge	14.46 days	12.15 days	10.4 days	11.67 days	17.83 days	16.41 days
Number of patients less than 1 year of age	10	7	3	0	2	4
Percentage of deaths among patients less than 1 year of age	70%	85.7%	33⅓%	0	50%	50%

* All of these were mild cases.

TABLE 2.—*Comparative Study of Therapy in Uncomplicated Cases of Erysipelas*

	Method of Therapy				
	Roentgen Irradiation	Ultraviolet Irradiation	Serum	Roentgen Irradiation and Serum	Ultraviolet Irradiation and Serum
Number of cases treated	87	68	10	20	12
When treated	1/22/26 to 9/25/28	10/2/28 to 9/1/29	1/1/27 to 4/30/29	1/22/26 to 9/25/28	10/2/28 to 9/1/29
Average time to normal temperature	3.39 days	3.46 days	4.73 days	5.15 days	3.58 days
Average time to normal symptoms	5.06 days	4.44 days	5.36 days	6.45 days	5.67 days
Average duration from treatment to discharge	7.5 days	7.88 days	7.64 days	10.0 days	8.92 days
Average duration from onset to discharge	10.87 days	10.24 days	9.73 days	15.25 days	14.25 days

Table 1 includes all of our cases of erysipelas from January, 1922, to September, 1929, except the 1924 series. One hundred and fifty-one cases were treated with magnesium sulphate and glycerin packs, 113 with roentgen radiation, 79 with ultraviolet radiation, 12 with antitoxin, 26 with combined roentgen radiation and antitoxin, and 21 with combined ultraviolet radiation and antitoxin. As the cases treated by both radiation and antitoxin were selected from the same groups as those treated by radiation alone, the criticism may be made that these comprise the more severe cases and thus are not representative, and also that the segregation of these smaller groups improves the statistical study in the larger groups. The first criticism may be met by the results shown in table 2, in which only uncomplicated cases are compared and in which the final average results are only slightly altered. The second criticism applies to a limited extent, as may be ascertained by combining the smaller groups with the groups treated only by irradiation. By doing this the average figures of the irradiated groups are only slightly affected, so that the general conclusions drawn from the study need not be materially altered.

A careful study of table 1 will reveal a definite advantage for the more recent methods of treatment, including roentgen irradiation, ultraviolet irradiation, and antitoxin, and will show that the best average results were obtained with ultraviolet irradiation. None of our methods seem to produce the striking results obtained by Birkhaug,[9] Symmers and Lewis,[10] and Symmers[11] with the use of antitoxin. We do not know how to explain this, as in our hands the use of antitoxin in even the mildest cases does not improve our statistics. Our patients, however, appear to return to normal, or are actually cured, in approximately the same average time as Symmers' "average number of days in the hospital of all patients treated with antitoxin." We feel that we may therefore assume that our statistics show longer hospitalization because of more prolonged observation in our contagious disease wards, and that aside from this our results compare favorably with those of the authors named.

These more recent methods of treatment have produced a reduction of 40 per cent in the mortality rate when compared with the series treated by magnesium sulphate packs. If we eliminate those cases in which death was due to other causes and in which the erysipelas was not the direct cause of death, we find a reduction of 44 per cent in the mortality. Comparison of the individual methods of therapy shows the lowest mortality rate in the ultraviolet series.

The temperature charts show a return to normal temperature from two and one-half to three days sooner in the cases treated by radiation than in those treated by the older method. A return to normal symptoms took place three or four days sooner in the irradiated group. In these figures the ultraviolet group also shows distinctly better results than any of the other groups.

We attempted to determine the number of cases that showed extension of the local lesion after treatment. This could not be determined in our control cases as the clinical notes were incomplete. In the later groups this could be determined. The roentgen irradiation group showed extension of the disease in 25.8 per cent, while the ultraviolet irradiation group showed 7.6 per cent extension. This rather marked variation may to some extent be due to the fact that the erythema following the latter method of treatment has a tendency to overshadow the local evidences of the disease. However, it shows that in 92 per cent of the ultraviolet series the disease is clinically arrested by the first treatment.

Probably the most critical test to which these methods of treatment may be subjected is a comparison of their effect on the total duration of the disease, and the duration of the disease after institution of the treatment. Our average results in this comparison show that the duration of the disease after roentgen irradiation averages two and one-third days less than in the control cases, while the ultraviolet series shows a corresponding advantage of three and one-third days. The total duration of the disease has been shortened by four days in the ultraviolet series, while the roentgen irradiation series shows a reduction of only 2.31 days. Our small group of cases treated only by antitoxin here compares favorably with the ultraviolet series. Although we do not presume to be able to draw final conclusions on such a small series of cases, we feel that there is no advantage in the use of antitoxin as compared with the use of ultraviolet radiation. This is especially evident when we consider that the group of twelve cases treated by antitoxin comprised the mildest cases in which we felt that we could experiment with this method of treatment. In fact, the forty-seven patients given the combined treatment of roentgen irradiation and antitoxin and ultraviolet irradiation and antitoxin usually received antitoxin as the initial treatment, and were irradiated only when it became evident that they did not respond. The statistics of these two groups compare very unfavorably with those of the control series, and with those of the irradiated groups. In table 2, in which we eliminate all of the complicated cases and quote the average statistics for the uncomplicated cases only, we substantiate the impression that a combination of irradiation and antitoxin has no advantage over the older method of treatment by magnesium sulphate packs.

The mortality rate in infants has always been high. In our group of twenty-six cases it is 65.4 per cent. Although the rate for the ultraviolet group of seven cases is below this average, we do not presume to lay much emphasis on this fact as the group is entirely too small for any deductions.

Table 2 shows a comparative study of the data in uncomplicated cases in which only one type of therapy was given, and includes under separate classification the uncomplicated cases in which combined irradiation and antitoxin therapy was given. This table merely substantiates the conclusion drawn from table 1; namely, that in our hands either form of irradiation produces approximately the same results as antitoxin therapy.

SUMMARY

1. We have made a comprehensive analysis of all the available data in 402 hospitalized cases of erysipelas. These were classified according to the method of treatment, and the data have been so arranged that a fairly accurate comparison of the results can be made.

2. The methods of treatment in these cases were as follows: (*a*) magnesium sulphate and glycerin packs; (*b*) roentgen irradiation; (*c*) ultraviolet irradiation; (*d*) erysipelas antitoxin; (*e*) roentgen irradiation and antitoxin; (*f*) ultraviolet irradiation and antitoxin.

3. The newer methods of treatment have reduced the mortality rate of erysipelas approximately 44 per cent.

9. Birkhaug, K. E.: Erysipelas, J. A. M. A. **86**: 1411 (May 8) 1926.
10. Symmers, Douglas; and Lewis, K. M.: Antitoxin Treatment of Erysipelas, J. A. M. A. **89**: 880 (Sept. 10) 1927.
11. Symmers, Douglas: The Antitoxin Treatment of Erysipelas, J. A. M. A. **91**: 535 (Aug. 25) 1928.

4. In cases treated by either roentgen or ultraviolet irradiation, the immediate results are exceedingly gratifying. The return to normal temperature and absence of symptoms takes place from three to four days earlier than in cases treated by the magnesium sulphate and glycerin pack method.

5. Ultraviolet irradiation produced a clinical arrest of the disease with the first treatment in 92 per cent of our cases.

6. Irradiation and antitoxin therapy definitely reduce the total duration of the disease as well as the average duration of the disease after the institution of treatment, and here also ultraviolet irradiation appears to give the best average results.

7. On the basis of this study we conclude that the newer methods of treatment show distinct advantages over the older methods; that the results obtained by either form of irradiation and by antitoxin are approximately the same, with slightly more favorable results in the ultraviolet group.

8. We further conclude on the basis of our clinical experience with the newer methods of therapy as well as on the basis of the present study that the treatment of erysipelas by ultraviolet irradiation may be advocated as a universally applicable method: (*a*) it is readily available in practically all communities and is devoid of danger, as contrasted with roentgen irradiation and antitoxin; (*b*) it usually requires only one treatment, but the treatment may be repeated several times without the least danger; (*c*) it is inexpensive; (*d*) the results are somewhat better in our hands than those of any other method of therapy.

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MEASLES PROPHYLAXIS

COMPARATIVE RESULTS WITH THE USE OF ADULT BLOOD, CONVALESCENT SERUM AND IMMUNE GOAT SERUM (TUNNICLIFF)*

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The high morbidity and mortality associated with measles in infants and young children, particularly those housed in institutions, urges the use of a procedure that will either prevent or modify this disease. To accomplish this end, Nicolle and Conseil,[1] in 1918, recommended the serum of patients convalescing from measles. It is now well established that convalescent measles serum is very effective in preventing measles when given in sufficient dosage in the course of the first five days of the incubation period and in attenuating the disease when given either in smaller amounts or somewhat later in the incubation period. In spite of its great clinical value, however, convalescent measles serum has not come into general use, chiefly because of the difficulty encountered in procuring it. Cases of measles in adults are uncommon, and in the case of children the parents are reluctant to allow blood to be withdrawn, especially during convalescence. For this reason investigators have been striving, during the past few years, to find another antimeasles agent that is available and at the same time effective.

The permanent immunity that almost invariably follows one attack of measles and the fact that a mother who has had measles imparts to her offspring sufficient antibodies to render the infant immune for the first few months of life indicate that most adults have an appreciable amount of these immune bodies in their blood. It was therefore logical that the value of adult blood in the prophylaxis of measles should be investigated. In 1920 Degkwitz [2] inoculated "adult serum" into seven children who had been exposed to measles, six receiving 30 cc. and one 20 cc. of serum. Four of the seven developed measles, but in an attenuated form. One year later, Rietschel [3] reported good results from the use of adult blood. During an outbreak of measles that occurred in an asylum harboring children from 1 to 2 years of age, Rietschel injected 20 cc. of adult whole blood into three exposed children and five served as controls. The three treated children came down with a markedly attenuated form of measles, whereas the five who remained untreated developed typical measles, complicated by bronchopneumonia in two instances. Later, Salomon,[4] Gerlach,[5] Hilsinger,[6] Kovacs [7] and others abroad and Zingher,[8] Karelitz and Levin,[9] Bivings,[10] Bader [11] and Van Cleve [12] in this country reported favorable results with the use of adult whole blood or serum as a prophylactic measure against measles.

Within the past decade or so, several investigators have isolated from patients with measles various organisms to which they attached etiologic significance. Tunnicliff [13] isolated a gram-positive green-producing diplococcus from the nose, throat and blood in early cases. Some years later, Ferry and Fisher [14] isolated a gram-positive streptococcus in patients having measles and designated this organism *Streptococcus morbilli*. Degkwitz [15] also has described an organism which he considered the causative agent of measles. All the investigators injected their organisms into either goats or horses with the purpose of producing an effective antimeasles serum. The reports of the clinical value of these serums have not been at all uniform. The most favorable and consistent results, however, seem to have been obtained with the use of immune goat serum (Tunnicliff). Thus, in 1926 Hoyne and Gasul [16] reported that, of thirty-nine children exposed to measles and given Tunnicliff serum, thirty-four remained free from the disease and five developed an attenuated form of measles. Of the nine children who did not receive the serum, eight came down with typical

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* From the Home for Hebrew Infants, service of Dr. Alfred F. Hess.

1. Nicolle, C., and Conseil, E.: Bull. et mém. Soc. méd. d. hôp. de Paris **42**: 336, 1918.

2. Degkwitz, R.: Ueber Masern-Rekonvalezentenserum, Ztschr. f. Kinderh. **27**: 171, 1920.

3. Reitschel: Zur Masernprophylaxe nach Degkwitz, Ztschr. f. Kinderh. **29**: 127, 1921.

4. Salomon, G.: Die prophylaktische Injektion von Normalserum als Masernschutz, Deutsche med. Wchnschr. **49**: 1151 (Aug. 31) 1923.

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6. Hilsinger, W.: Erwachsenblut-Einspritzungen zum Masernschutz, Arch. f. Kinderh. **76**: 211 (Aug.) 1925.

7. Kovacs, E.: Erfahrungen mit der Rietschelschen Masernprophylaxe, Deutsche med. Wchnschr. **51**: 1703 (Oct. 9) 1925.

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9. Karelitz, Samuel; and Levin, Samuel: Measles Prophylaxis by Use of Convalescent Serum, Adult Blood or Serum, Am. J. Dis. Child. **33**: 408 (March) 1927.

10. Bivings, L.: Measles Prophylaxis by the Use of Parents' Blood Serum, South. M. J. **20**: 735 (Sept.) 1927; abstr. J. A. M. A. **89**: 1724 (Nov. 12) 1927.

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12. Van Cleve, J. D.: Measles Prophylaxis with Serum of Adults Who Had Measles in Childhood, Arch. Pediat. **47**: 124 (Feb.) 1930.

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14. Ferry, N. S., and Fisher, L. W.: Measles Toxin, J. A. M. A. **86**: 932 (March 27) 1926.

15. Degkwitz, R.: Spezifisches Masernschutzserum vom Tier, München. med. Wchnschr. **73**: 181 (Jan. 29) 1926.

16. Hoyne, A. L., and Gasul, B. M.: Measles Prophylaxis: Report on the Use of Immune Goat Serum, J. A. M. A. **87**: 1185 (Oct. 9) 1926.

measles, two of whom died. Tunnicliff and Hoyne [17] published their experiences with the use of immune goat serum in sixty persons who had been exposed to measles. When the serum was given during the first three days of the incubation period, the disease was prevented in 97 per cent of the cases, but when given later than the fourth day no protection occurred. In 1928 Peterman [18] reported that complete protection resulted in thirty-one of thirty-four exposed children who were inoculated with Tunnicliff serum. Reports of favorable results have been published also by Halpern,[19] Hoyne and Peacock,[20] and recently again by Peterman.[21]

An epidemic of measles broke out in the Home for Hebrew Infants in the spring of 1929 and lasted two months. This institution harbors approximately 325 children, about 150 being under 2 years and the remainder from 2 to 4 years of age. During the past fifteen years, several outbreaks have occurred in this institution and there is no contagious disease for which we have greater fear. The death rate in the institution has been highest during those years in which measles has occurred, the increase in mortality having resulted from complicating pneumonia and empyema. It was therefore of the greatest urgency to check the epidemic as quickly as possible or at least to modify its character. At the beginning of the epidemic, convalescent measles serum was not available; but since the reports of the use of adult whole blood and Tunnicliff immune goat serum in measles prophylaxis were so encouraging, it was decided to employ these agents. Accordingly 112 infants, ranging from 4 to 18 months and fifty-six children from 2 to 4 years of age received intramuscular injections of 30 cc. of adult whole blood. Tunnicliff antimeasles goat serum, which was obtained through the courtesy of Dr. Ruth Tunnicliff, was inoculated into thirty-eight children, each receiving 8 cc. Normal goat serum was used in eleven children as a control. As the epidemic progressed we were able to obtain convalescent serum from some of the children and also from three of the nurses who developed the disease. This form of treatment was given to sixty-four children. Twenty-three children did not receive injections of any kind. Thus an opportunity presented itself to compare the relative value of various prophylactic agents.

ADULT WHOLE BLOOD

Blood was usually taken from the parent of the child who was to be inoculated, after a careful history had been obtained to eliminate the possibility of tuberculosis or syphilis. Thirty cubic centimeters of blood was withdrawn from the arm under aseptic precautions and collected into a flask which contained a few crystals of sodium citrate. The blood was either used immediately or kept in a refrigerator and used within twenty-four hours. Fifteen cubic centimeters was injected into the upper and inner quadrant of each buttock, as a larger amount is apt to cause discomfort and even necrosis. It may be added that the injections were well tolerated and that in no instance was a rise in temperature noted.

Of the fifty-six children who received 30 cc. of adult whole blood, forty-three, or 77 per cent, developed measles. As table 1 indicates, twenty-three, or 53 per cent, of these cases were of the modified or attenuated type. Thirteen children remained free from the disease, although they had been exposed to measles throughout the epidemic, which lasted two months. Since the entire uninoculated group of twenty-three children came down with measles which in no instance could be classed as attenuated (table 2), it must be concluded that thirty-six, or 64 per cent, of this group were definitely benefited by the use of adult whole blood. It should be stated that the attenuation resulting from this blood was not quite so pronounced as that noted from the use of convalescent serum. The increase in temperature in the attenuated disease was moderate, with an average duration of three days; the catarrhal symptoms were either absent or very mild; Koplik spots were present in about 50 per cent of the cases; the rash in some instances was scanty, in others widespread but never confluent. Of great importance was the fact that these children did not appear ill. They were almost invariably either sitting or standing in their beds and showed no signs of discomfort. No complications developed.

It may be noted from table 1 that attenuation depends on the day of the incubation period on which the injection is given; when it was given in the course of the first five days or from one to eight days prior to incuba-

TABLE 1.—*Clinical Data and Course of Forty-Three Cases of Measles Among Children Who Received Adult Blood*

		Day of Inoculation in Relation to Incubation Period						
Name	Ward	Before	During	Koplik Spots	Eruption	Fever Days	Course	Comment
C. T.	2	..	10	+	++±	10	Moderate	
G. N.	6	..	9	—	+++	5	Moderate	
B. R.	6	..	8	+	++±	3	Moderate	
S. W.	6	..	7	+	+±	3	Mild	
H. L.	6	..	7	+	+++	3	Mild	
S. T.	6	..	7	+	+±	3	Mild	
P. S.	2	..	7	+	+++	3	Moderate	
M. K.	6	..	5	+	+	4	Attenuated	
T. R.	6	..	5	+	+	2	Attenuated	
P. P.	6	..	5	+	+	3	Attenuated	
L. R.	6	..	5	—	+	1	Attenuated	
E. H.	6	..	4	+	++	5	Attenuated	
R. F.	6	..	4	—	++	5	Attenuated	
H. R.	6	..	2	+	+	4	Attenuated	
C. C.	6	..	1	+	+	3	Attenuated	
M. A.	6	1	..	+	++	5	Moderate	20 cc. blood
R. K.	2	1	..	—	+±	7	Attenuated	
R. L.	2	2	..	—	++	6	Mild	
B. S.	Inf.*	3	..	—	+±	2	Attenuated	
A. L.	2	4	..	—	+±	4	Attenuated	
H. D.	Inf.	4	..	—	+	2	Attenuated	
H. S.	Inf.	4	..	—	++	4	Attenuated	
W. R.	2	4	..	+	++	3	Attenuated	
S. A.	2	4	..	+	++	2	Attenuated	
A. G.	2	4	..	+	++	3	Attenuated	
M. B.	2	4	..	+	++	3	Attenuated	
W. L.	2	4	..	+	++	4	Attenuated	
M. S.	Inf.	6	..	—	+±	4	Attenuated	
N. D.	Inf.	6	..	—	+	4	Attenuated	
H. R.	2	6	..	+	++	9	Moderate	Otitis media
E. B.	9	6	..	—	++±	4	Attenuated	
R. G.	2	6	..	—	++	5	Attenuated	
P. T.	6	8	..	—	+	1	Attenuated	
E. A.	9	12	..	+	++±	9	Moderate	Otitis media
M. S.	Inf.	15	..	+	++	9	Moderate	
M. J.	Inf.	16	..	+	++±	8	Moderate	
J. T.	Inf.	16	..	+	++	9	Moderate	
D. R.	Inf.	19	..	+	++	9	Moderate	Otitis media
H. E.	Inf.	19	..	+	++	10	Moderate	Otitis media
S. M.	Inf.	19	..	+	++	10	Moderate	Otitis media
A. L.	Inf.	21	..	+	++±	6	Moderate	
Y. G.	Inf.	21	..	+	++	6	Moderate	Hemorrhagic rash
F. M.	7	23	..	+	+++	7	Severe	Otitis media, adenitis

* Infirmary.

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20. Hoyne, A. L., and Peacock, Silber: Prevention and Modification of Measles with Antimeasles Diplococcus Goat Serum, Am. J. Dis. Child. **35**: 1021 (June) 1928.
21. Peterman, M. G.: Antimeasles Diplococcus Goat Serum (Tunnicliff), Am. J. Dis. Child. **39**: 294 (Feb.) 1930.

tion, modification resulted in twenty-three out of twenty-six children. Of the three children who failed to develop "attenuated measles," one received only 20 cc. of blood. In almost all of the papers dealing with prophylaxis in measles, the day of the incubation period has been determined by computing the number of days that the child had been exposed. This method may hold good for children exposed to measles in private homes but cannot be utilized in institutions or hospitals where children are harbored in large wards and therefore are not so apt to come into intimate contact with the patient having measles. Some may contract the disease on the first day of exposure, others as late as the seventh, and still others may not develop it in spite of the fact that they have remained in the same ward during the entire course of the disease, only to come down with measles at a subsequent outbreak. It is possible that these children had a partial immunity at the beginning of the epidemic and required intensive or repeated exposures before developing the disease. This feature is well illustrated in the study of

TABLE 2.—*Clinical Data and Course of Twenty-Three Cases of Measles Among Children Not Receiving Prophylactic Inoculations*

Name	Ward	Koplik Spots	Fever Days	Eruption	Course	Comment
F. L.	2	+	4	++	Mild	
M. M.	2	+	5	++	Marked	Enteritis and otitis media
H. B.	6	+	5	+++	Marked	Otitis media
R. M.	6	+	10	++	Marked	
D. K.	6	+	2	+++	Mild	
K. S.	6	+	5	+++	Moderate	
P. B.	9	+	8	+++	Marked	
Y. G.	9	+	9	+++	Marked	Child was toxic; otitis media
E. B.	Inf.	+	14	++±	Marked	Otitis media
E. F.	Inf.	+	6	++	Moderate	
B. H.	Inf.	+	9	+++	Marked	Otitis media
F. H.	Inf.	+	7	++	Moderate	
B. Y.	Inf.	+	5	++	Mild	
M. K.	11	+	5	++++	Marked	
D. S.	11	+	3	++	Moderate	
F. K.	9	+	7	++±	Marked	
S. F.	Inf.	+	14	++±	Marked	Otitis media
L. M.	10	+	4	++	Moderate	
H. W.	10	+	8	++±	Marked	
M. M.	10	+	16	+	Marked	Bronchopneumonia; died
H. H.	Inf.	+	8	++±	Marked	
P. M.	Inf.	+	6	++	Marked	
H. W.	Inf.	+	17	++	Marked	Bronchopneumonia

the control group in which some developed measles only after a second outbreak in the ward. It is obvious, then, that the number of days of exposure cannot serve as a guide for determining the day of the incubation period of measles. We were able to determine with a fair degree of accuracy the day of the incubation period on which the injection of blood was given only in those children who came down with measles. The method employed was as follows: By subtracting fifteen days from the time of appearance of the rash, the first day of incubation was obtained. It should be added that we were able to trace a number of cases of attenuated measles to their original source and that it was found that the incubation period in these cases was not prolonged. Degkwitz [2] also found that the incubation period was normal in attenuated measles which resulted from injections of adult blood. In our opinion the unusually long incubation period observed by some authors in this type of measles is not correct, the disease presumably having resulted from a later contact.

A glance at table 1 shows that, if infection takes place later than eight days after the inoculations of blood, no beneficial effect results. This point must be borne in mind, especially in institutions and hospitals where there are usually a number of successive outbreaks; and in order to insure attenuation of measles in almost every child who develops the disease, a practical method would be to repeat the injections of blood every twelve days in those who have not yet come down with the disease. It is obvious that this procedure would have to be carried out at the expense of reinoculating some children who either have already developed complete protection or are about to come down with attenuated measles. In private homes, however, since children are in closer contact, infection almost always follows exposure to measles, and therefore it will rarely be necessary to repeat the administration of blood.

Nineteen children, or 34 per cent of those who received adult whole blood, were not protected. Seven of these received the injection of blood too late, in other words from the seventh to the tenth day of the incubation period, whereas ten were infected with measles from twelve to twenty-three days after receiving the inoculation and thus were deprived of the protective value of the blood.

Of this group, thirteen children, or 23 per cent who did not develop measles, had been in the institution since birth, so that we are certain that they had never had measles. They were in various wards and were repeatedly exposed to the disease. Since, as stated, the entire control group developed measles, protection must be ascribed to the injection of blood. It is conceivable that these children had a partial immunity at the outset and that with the injection of blood they received sufficient antibodies to carry them over the epidemic. The possibility that the blood which these children received contained a particularly high titer of measles immune bodies must also be considered. How long these children would have remained protected had the epidemic persisted for a longer period is mere conjecture. In this connection, it is interesting that two children suffering from pneumonia who were given transfusions of blood in amounts of 400 cc. also remained protected throughout the epidemic, although actively exposed.

The proportion of complications in this group was 14 per cent, as compared to 35 in the control group. It may be noted that the complications occurred only in those children who did not come down with the attenuated form of measles. The complications consisted mainly of otitis media, whereas in the control group two children also developed bronchopneumonia. Had we known that the protection with 30 cc. of adult whole blood does not last longer than eight days, we could have diminished the number of complications by repeating the injections.

The importance of the use of a prophylactic agent in infants has been emphasized. Since it was desirable to confer as high a degree of protection as possible on the infants, the same amount of blood was used as in the older children. One hundred and twelve infants, ranging from 4 to 18 months of age, who were housed in five wards, were given injections of 30 cc. of adult whole blood. The seriousness of measles in infants did not warrant the formation of a control group. Not one of these infants came down with measles. It must be added, however, that there was no active exposure to measles in these wards, so that it cannot be concluded that these infants were protected solely by the blood injections. In the past epidemics, the infant wards were invariably involved, so we believe that the use of adult whole blood was in a large measure responsible

for the freedom from measles. It may be mentioned that Gerlach [5] and Kovacs [7] reported complete protection in 90 per cent of actively exposed infants who were given injections of from 20 to 30 cc. of adult whole blood.

CONVALESCENT MEASLES SERUM

Sixty children received 6 cc. of convalescent measles serum, which was obtained either ten days or thirty days after defervescence. Forty-four, or 73 per cent, remained completely protected. Of the sixteen children who developed the disease, fourteen came down

TABLE 3.—*Clinical Data and Course of Measles Among Children Who Received Immune Goat Serum (Tunnicliff)*

Name	Ward	Day of Inoculation in Relation to Incubation Period: Before	During	Koplik Spots	Eruption	Fever Days	Course	Comment
I. S.	Inf.	..	1	+	+++	8	Marked	
Y. G.	Inf.	..	1	+	++	7	Moderate	
I. P.	Inf.	..	1	+	+++	8	Moderate	
R. L.	Inf.	..	1	+	++	7	Moderate	Otitis media
N. F.	Inf.	..	1	+	++	7	Moderate	
L. S.	9	..	1	+	++	8	Marked	Otitis media; toxic
B. H.	9	..	1	+	++	5	Moderate	
F. L.	9	..	1	+	++±	5	Marked	Toxic
S. R.	9	..	1	+	++	5	Marked	Toxic; serum sickness
R. R.	9	..	1	+	++++	10	Marked	Otitis media, anuria, serum sickness
L. L.	2	..	1	+	++	5	Marked	Otitis media
F. K.	9	..	2	+	+++	12	Marked	Bronchopneumonia; toxic serum sickness
F. F.	Inf.	..	2	+	+++	5	Moderate	
P. W.	Inf.	..	2	+	+++	7	Moderate	
F. P.	Inf.	..	2	+	+++	8	Marked	
D. K.	Inf.	..	3	+	++	6	Moderate	
H. N.	9	..	3	±	++	7	Moderate	
L. S.	9	..	3	+	++	8	Marked	Otitis media; toxic
B. T.	Inf.	..	3	+	+++	7	Marked	Toxic marked, serum sickness
B. C.	Inf.	..	3	+	++++	6	Marked	Toxic marked, serum sickness
G. E.	Inf.	1	..	+	+++	12	Marked	Otitis media, toxic, serum sickness
A. C.	Inf.	1	..	+	++	7	Moderate	
S. G.	Inf.	1	..	+	++	7	Moderate	
S. H.	9	1	..	+	+++	5	Marked	
A. S.	2	1	..	+	+++	10	Marked	Otitis media
R. F.	2	1	..	+	++	7	Marked	Otitis media
H. A.	Inf.	1	..	+	++	5	Moderate	
R. P.	9	2	..	+	++±	7	Marked	Toxic
S. B.	Inf.	3	..	+	+++	5	Moderate	
C. F.	11	4	..	+	++	5	Moderate	
L. S.	Inf.	4	..	+	++	8	Moderate	Otitis media
S. E.	9	6	..	+	++	5	Moderate	
R. S.	9	8	..	+	+++	9	Marked	
I. B.	11	13	..	+	++	7	Moderate	Otitis media
D. B.	11	14	..	+	++	4	Moderate	
R. S.	11	14	..	+	++	6	Moderate	
R. G.	11	15	..	+	++±	5	Moderate	
B. W.	11	18	..	+	+++	6	Moderate	

with a markedly attenuated form of measles. One of the two children who developed moderate measles received convalescent serum on the last day of the incubation period. No complications were observed in this group. It may be added that the thirty day serum seemed to be just as potent as the ten day serum.

TUNNICLIFF SERUM

Thirty-eight children were given 8 cc. of immune goat serum (Tunnicliff). As indicated in table 3, the entire group developed measles, seventeen of the severe and the others of the moderate type. Twenty were given the serum during the first three days of the incubation period, while twelve were inoculated from one to six days and six from eight to eighteen days prior to infection. Several of these children were extremely sick and the group as a whole presented the most serious cases of measles in the institution. The temperature ranged from 102 to 104 F., with an average duration of seven days. Serum sickness was observed in six cases and was marked. Ten children developed

TABLE 4.—*Comparison of the Results of Various Prophylactic Agents Against Measles According to Individual Wards*

Ward	No. of Children Inoculated	Type of Inoculation	No. of Children With Measles	Number With Attenuated Measles	Number Completely Protected	Number With Complications
11	26	20 convalescent serum	8	6	12	0
		6 Tunnicliff serum	6	0	0	1
7	17	16 convalescent serum	3	2	13	2
		1 adult blood	1	0	0	1
6	22	22 adult blood	15	9	7	0
2	25	16 adult blood	12	8	4	2
		4 Tunnicliff serum	4	0	0	3
		5 normal goat serum	4	0	1	2
9	23	2 adult blood	2	1	0	1
		6 normal goat serum	6	0	0	2
		15 Tunnicliff serum	15	0	0	4
10	16	16 convalescent serum	2	2	14	0
Inf.	38	8 convalescent serum	3	3	5	0
		13 Tunnicliff serum	13	0	0	2
		2 normal goat serum	2	0	0	0
		15 adult blood	13	4	2	4

otitis media and one bronchopneumonia, the proportion of complications being 29 per cent. These children were housed in the same wards in which adult whole blood and convalescent measles serum were employed, and thus a fair opportunity seems to be afforded of comparing the relative value of these prophylactic agents (table 4). The good results with the use of convalescent serum and adult whole blood stand out in striking comparison to the results with Tunnicliff serum. These results differ widely from those reported by the authors previously mentioned, and we are at a loss how to explain the divergence. It may be added that, in a discussion of a paper on measles prophylaxis,[22] Park stated that he had not obtained favorable results with this serum, although he did not present data.

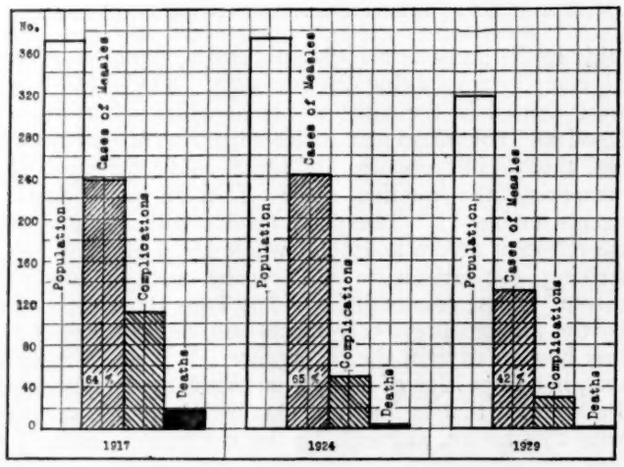
TABLE 5.—*Incidence and Course of Measles Among Treated and Nontreated Children*

Type of Treatment	Number of Children Injected	Number with Measles	Per Cent with Measles	Course: Attenuated	Course: Mild	Course: Moderate	Course: Severe	Per Cent Attenuated	Number with Complications	Per Cent with Complications
Convalescent serum, 6 cc.	60	16	27	14	0	2	0	88	0	0
Whole blood, 30 cc.	56	43	77	23	4	15	1	53	6	11
Tunnicliff serum, 8 cc.	38	38	100	0	0	21	17	0	11	29
Normal goat serum, 8 cc.	13	12	92	0	0	5	7	0	4	33
None.....	23	23	100	0	3	5	15	0	8	35

Of the thirteen children who were given 8 cc. of normal goat serum, twelve developed measles; seven were marked and the remainder were moderate cases. One child escaped infection, although as far as we know it had never had measles. Serum sickness was noted in three and otitis media in four instances.

22. Silverman, A. C.: Serum Prophylaxis in a Measles Epidemic, J. A. M. A. 91:1786 (Dec. 8) 1928.

The comparative value of convalescent serum, adult whole blood and immune goat serum (Tunnicliff) is clearly brought out in table 5. Since the entire group of thirty-eight children who received immune goat serum and twelve of thirteen who received normal goat serum were to no extent protected, the control group may be considered as consisting of seventy-four children, among whom seventy-three, or 99 per cent, developed typical measles. This high incidence in the control group permits one to draw definite conclusions as to the efficacy of convalescent measles serum and adult whole blood in this epidemic. Convalescent measles serum was of particular value in preventing the disease, whereas adult blood was effective in bringing about attenuated measles in a high percentage of the children. This form of the disease is highly desirable for children of private homes, since permanent immunity also results from attenuated measles. In institutions and hospitals, complete protection should be the goal. With the injection of 30 cc. of blood, complete prevention was brought about in only 23 per cent of the children. Had we used a larger amount, the percentage of complete protection undoubtedly would have been higher. Since it is not practical to inject intramuscularly more than 30 cc. of whole blood,



A comparison of the end-results of three epidemics of measles which occurred in the institution during the years 1917, 1924 and 1929.

it is necessary to use serum if a larger amount of antibodies is desired. According to Karelitz and Levin,[9] inoculations of from 30 to 40 cc. of serum during the first four days and of from 40 to 50 cc. during the fifth to the seventh days of the incubation period bring about complete protection in children aged 3 years or over.

It may be of interest to compare the results of this epidemic with those of two previous outbreaks, one occurring in 1917 and the other in 1924, as presented in the accompanying chart. In 1917 no prophylactic treatment was employed. Of 372 exposed children, 238 came down with measles, an incidence of 64 per cent. Complications occurred in 118 children, or 47 per cent of the cases, and consisted chiefly of pneumonia and otitis media. There were nineteen deaths, a mortality of 8 per cent. During the 1924 epidemic, convalescent whole blood was employed and the results were published in detail by Haas and Blum.[23] The incidence in this epidemic was not diminished. A large number of the children, however, developed attenuated measles and as a result there was a considerable reduction in the morbidity and mortality. In the present epidemic, prophylaxis was employed on a greater scale and the incidence of measles was reduced to 42 per cent. The complications were less numerous and milder than in the 1924 epidemic. Only one death occurred during the entire epidemic. The complications occurred chiefly among the untreated children.

23. Haas, S. V., and Blum, Julius: The Prophylactic Value of Blood of Convalescents in Measles, J. A. M. A. 87: 558 (Aug. 21) 1926.

SUMMARY

An epidemic of measles broke out in an institution harboring approximately 325 children, 150 under 2 years and the others from 2 to 4 years of age; the epidemic lasted for a period of two months, and of 318 susceptible children 132, or 42 per cent, developed the disease.

Of fifty-six children actively exposed who received 30 cc. of adult whole blood, forty-three developed measles. Since twenty-three of the fifty-six children developed an attenuated form of measles and thirteen were fully protected, we conclude that thirty-six children, or 64 per cent of this group, were benefited by these injections. When the blood was injected in the course of the first five days of the incubation period or from one to eight days prior to incubation, attenuation of measles resulted in twenty-three of the twenty-six children. However, when the injection of blood was not given within the times specified, attenuation did not result. The modification of measles due to adult blood was not quite so pronounced as that following the use of convalescent measles serum. The percentage of complications in this group was eleven, as compared to thirty-five in the control group, and these complications occurred only in those children who did not develop attenuated measles. One hundred and twelve infants who were not actively exposed received 30 cc. of adult blood and remained free from measles.

The entire group of thirty-eight children who received 8 cc. of immune goat serum (Tunnicliff) developed typical measles in spite of the fact that twenty were given the serum within the first three days of the incubation period. The percentage of complications in those receiving this serum was approximately as high as that in the control group. Of thirteen children who received normal goat serum, twelve came down with typical measles.

Sixty children received 6 cc. of convalescent measles serum and of these forty-four, or 73 per cent, remained completely protected, and fourteen, or 23 per cent, developed markedly attenuated measles; thus 96 per cent of the children of this group were protected by the use of convalescent measles serum. No complications were observed among these children.

Among twenty-three children who received no blood or serum, all developed typical measles. Complications were noted in 35 per cent of these children, two developing bronchopneumonia.

CONCLUSIONS

1. Convalescent measles serum is the most effective prophylactic measure against measles, but its application is limited because of its lack of availability.

2. The blood of normal adults who have previously had measles is of great value in bringing about an attenuated form of measles and is the most practical method of prophylaxis.

3. We failed to confer protection or to mitigate the disease by means of immune goat serum (Tunnicliff).

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SCURVY IN ADULTS

REPORT OF TWO CASES

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Scurvy in adults living the usual life of urban centers is a rare disease. Umber [1] in 1922 remarked that, during the fifty-eight years of the existence of the Berlin Medical Society, no report of scurvy in adults had ever been presented before that body, except one that described an instance in an exploring expedition at the antipodes. In the cities of the Atlantic seaboard the disease appears somewhat more frequently; twenty-two cases of scurvy in individuals over 20 years of age were diagnosed at the Boston City Hospital and at the Massachusetts General Hospital between the years 1923 and 1928. This low incidence of the disease is not surprising. The average dietary supplies an ample supply of antiscorbutic vitamin and it has been repeatedly shown that a deficiency in the ingestion of this vitamin must continue for from four to seven months before the first definite symptoms of the malady develop. Thus, scurvy will develop only in those who, for one reason or another, do not take the same diet as do others living in the same environment.

The reasons for such dietetic errors have been variously described. Economic factors are stressed by Shattuck [2] and by Hess.[3] It is not, however, among the destitute, tramps and vagrants that these cases are seen. Frequently "dietetic eccentricity" forms part of the abnormal behavior of maladjusted personalities and the high incidence of scurvy in institutions for the insane (commented on by Hess) may not, we believe, be attributable always to inefficient management. In one group of cases, a typical history is obtained of a rather "shut-in" person of solitary habits who prepares his own meals and eats simple food of high caloric value. Meulengracht [4] has reported a series of cases of scurvy in "men living alone," and Shattuck noted eight widows and widowers among the thirty-one scorbutic patients who comprise his series. Another group of cases may be expected to occur among those with "gastric neuroses," individuals who limit their diet in fantastic attempts at self-treatment. It is improbable that cases of avitaminosis develop often as a result of dietary restriction prescribed by physicians.

Our first case illustrates dietetic errors in a Russian immigrant widower in the sixth decade of life, who led a solitary existence and prepared his own meals; our second patient was a neurotic woman, aged 23, who complained of ill defined gastric symptoms.

REPORT OF CASES

CASE 1.—J. R., a Russian Jewish widower, aged 56, a tailor, was admitted to the Sinai Hospital, May 11, 1928, because of pains in the muscles of the legs, especially behind the knee joints. These pains were aggravated by walking. The family history was essentially negative. The patient had had transient hoarseness at intervals since 1916, and had suffered from chronic constipation for twenty years. The left eye had been sightless for eight years. There had been occasional bleeding from the right side of the nose. His usual weight was 185 pounds (84 Kg.); his weight on admission was 140 pounds (63.5 Kg.). Since 1925 there had been increasing painless weakness of the legs, and by January, 1928, the weakness had increased until he was unable to walk five blocks. At the beginning of March, 1928, the pain was so intense that he was forced to remain in bed; with rest the pain disappeared, but when physical activity was resumed the pain promptly reappeared and he had been confined to bed for three weeks prior to his admission to the hospital.

At the time of his admission the temperature was 99 F., the pulse 88 a minute, the respiration 22 a minute and the blood pressure 155 systolic and 90 diastolic. There was marked pallor of the skin and there was an acneform eruption over the body. The gums were spongy and hypertrophied. There was marked dental caries; many teeth were missing and fetor oris was marked. There was a small ulceration in the left nostril. Modification of the percussion note and of the breath sounds over the apex of the right lung were present, as evidence of an old fibrosis of the apex. There were extensive ecchymoses about both popliteal fossae and these areas as well as the calves of the legs were extremely painful on pressure. The right knee kick could not be elicited.

Examination of the blood at the time of admission showed: hemoglobin, 60 per cent; red blood cells, 2,528,000; white blood cells, 10,000, with a differential count of 66 per cent polymorphonuclears; 7 per cent large lymphocytes; 23 per cent small lymphocytes, and 4 per cent large mononuclears and transitionals, and a platelet count of 280,000 per cubic millimeter. The clotting time was one and one-half minutes (Howell), the bleeding time one minute. There was no abnormal fragility of the red cells. The urine was normal. The phenolsulphonphthalein output was 50 per cent in two hours. The blood urea nitrogen was 19.60 mg. per hundred cubic centimeters. Roentgen studies of the chest showed fibroid infiltration of the right apex. A roentgenogram of the left leg did not show any pathologic changes. The dentist reported "hemorrhagic hypertrophic gingivitis due to a chronic periodontitis or to a suppurative pyorrhea alveolaris." Roentgenographic examination of the teeth showed resorption of the alveolar process extending to and involving the apical third of all the roots.

TABLE 1.—*Blood Changes in Case 1*

	5/14/28	5/20/28	
Hemoglobin	58%	68%	80%
Red blood cells	3,100,000	2,840,000	3,712,000
White blood cells	11,000	8,000	7,000
Differential formula:			
Polymorphonuclears	78%	69%	78%
Large lymphocytes	4%	10%	2%
Small lymphocytes	11%	17%	16%
Large mononuclears	7%	4%	4%
Transitionals	7%	...	...

May 14, the house officer noted that the patient talked incoherently and seemed disoriented. A tentative diagnosis of scurvy was made and the patient was given one glass of orange juice with each meal. By May 28, two weeks after this treatment was begun, the patient showed a remarkable improvement. The sponginess of the gums and the fetor oris had disappeared; the ecchymoses, although still present, were smaller and the legs were no longer painful on pressure. The patient was still unable to walk, because of general weakness. By June 8, the mouth was completely normal and the patient was able to stand unassisted. It was not until June 16 that it was ascertained that the patient, though living with relatives, was accustomed to take his meals in his own room and that he had not eaten any fresh fruits or vegetables in the past five years.

The secondary anemia disappeared, as evidenced by the blood counts in table 1. This improvement may have been due in part to a course of twelve doses of sodium cacodylate, ¼ grain (16 mg.) each, begun, May 18.

The patient was discharged cured, June 23.

CASE 2.—Miss J. R., American, aged 23, a labeler in a canning factory, was admitted to the West Baltimore General Hospital, Aug. 20, 1928, because of stiffness of the right knee and of pain and swelling in both knee and ankle joints, and of continuous vaginal bleeding for three months. The family history

1. Umber, F.: Med. Klin. **18**: 851 (July 2) 1922.
2. Shattuck, G. C.: Scurvy with Reference Especially to Adults, J. A. M. A. **90**: 1861-1864 (June 9) 1928.
3. Hess, A. F.: Scurvy Past and Present, Philadelphia, J. B. Lippincott Company, 1920.
4. Meulengracht: Acta med. Scandinav. **67**: 43 (Oct. 8) 1927.

was essentially negative. She stated that she had been perfectly well until 1925. At that time she began to feel depressed and melancholy and went to her family physician, who treated her. About ten months before she began to complain of a "nervous stomach" and was given a special diet. She complained of fulness and of gaseous eructations and stated that "she felt full of gas all the time." She had never had nausea or spontaneous vomiting but sometimes was relieved of distention by inducing vomiting. About three months before, the patient had noticed soreness and bleeding of the gums and was treated for this by a dentist. Since then bluish areas had appeared on both lower extremities and particularly on the right knee. She had not been able to extend the knee completely for two weeks. In May, 1928, she menstruated at the regular time but the vaginal bleeding continued until the time of her admission to the hospital. Insomnia, weakness, dyspnea and edema of the ankles developed, but there was no palpitation or precordial pain.

When the patient was admitted to the hospital her temperature was 101.6, the pulse 94 a minute, the respiration 22 a minute and the blood pressure 104 systolic and 50 diastolic. The patient was a blond, tall, well developed and well nourished. There was a waxy pallor of the skin, of the palpebral conjunctiva and of the lips. The pallor of the buccal and of the pharyngeal mucous membranes was in striking contrast to the extreme redness of the gums. The latter were spongy and bled when touched lightly. The teeth were loose. The abdomen was flaccid; otherwise the trunk showed no abnormalities. There were numerous ecchymoses visible on the legs, particularly about the ankles and in the right popliteal space. The patient was unable fully to extend the right leg, although she could flex it normally. Both ankles were edematous and both legs were tender on deep pressure. The tendon reflexes were hyperactive. No pelvic disease was apparent.

Examination of the blood, August 30, showed: hemoglobin, 47 per cent; red blood cells, 2,790,000; white blood cells, 11,350, with a differential count of 79 per cent polymorphonuclears; 2 per cent polymorphonuclear eosinophils; 2 per cent polymorphonuclear basophils; 12 per cent small lymphocytes, and 3 per cent transitionals. The clotting time varied between four and six minutes (Howell). The clot retracted normally. The urine on admission showed a trace of albumin. The phenolsulphonphthalein output was 40 per cent in two hours. The blood urea nitrogen was 29.1 mg. per hundred cubic centimeters. Gastric analysis showed 6 per cent free hydrochloric acid, a total acidity of 18 per cent and a combined acidity of 12 per cent. The capillary resistance test was positive, marked petechial spots appearing in the cubital fossa after constriction of the upper arm at 80 mm. of mercury for three minutes.

Further investigation elicited the fact that the patient had, for the past few years, lived almost exclusively on a diet of crackers and milk. A diagnosis of scurvy was made and the patient was given a general diet with fresh orange juice; in addition, sodium cacodylate and solution of potassium arsenite were administered.

Improvement was rapid and striking; the secondary anemia disappeared, the subsequent blood counts being as given in table 2.

The vaginal bleeding ceased on the sixth day after the initiation of treatment and the pain in the extremities ceased on the tenth day. On the sixteenth day, the mouth was normal. By the twentieth day the capillary resistance test was negative. The ecchymoses had completely disappeared by the twenty-sixth day, when the patient was discharged cured.

TABLE 2.—*Blood Changes in Case 2*

	9/1	9/7	9/11	9/15	9/20	9/24	10/2
Hemoglobin	....	47%	56%	69%	69%	69%	70%
Red blood cells	....	2,880,000	3,130,000	3,390,000	3,630,000	3,500,000	3,400,000
White blood cells	....	8,700	9,300	.....	.....	13,050	.....
Differential formula:							
Polymorphonuclears	72%	74%	.....	.....	.....	67%	.....
Polymorphonuclear eosinophils	....	....	.....	.....	.....	....	.....
Polymorphonuclear basophils	2%	....	.....	.....	.....	....	.....
Small lymphocytes	15%	20%	.....	.....	.....	19%	.....
Large lymphocytes	3%	3%	.....	.....	.....	11%	.....
Large mononuclears	2%	....	.....	.....	.....	....	.....
Transitionals	6%	3%	.....	.....	.....	1%	.....

COMMENT

The relative rarity of scurvy in adults and the greater frequency of other diseases characterized by hemorrhage leads often to a tentative diagnosis of purpura hemorrhagica, symptomatic purpura, hemophilia, anemia, leukemia or sepsis before scurvy is considered. It should be emphasized that an exact and careful inquiry into the nutritional habits of patients is an important part of the collation of a history. In the two cases reported, the essential illuminating fact that there had been for a long time a dietary insufficiency was brought out only after careful studies had excluded as causal the more usual syndromes in which the presenting symptoms occur.

Sinai Hospital.

THE DIAGNOSTIC VALUE OF THE COMPLEMENT FIXATION TEST IN AMEBIC INFECTIONS*

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In July, 1927, I [1] called attention to the fact that alcoholic extracts of cultures of *Endameba histolytica*, the cause of amebic dysentery, possessed marked complement-binding power when used as an antigen in complement fixation tests of individuals infected with this parasite. In January, 1928,[2] and again in July, 1928,[3] I published papers giving the results of this complement fixation test, and, in September, 1929,[4] a paper giving the technic and the results of the test up to July, 1929.

It is my purpose in this paper to give the results obtained with this complement fixation test to March 30, 1930, together with a discussion of its value in the diagnosis of infections with *Endameba histolytica*, based on my experience with it over a period of nearly three years.

TECHNIC

The exact technic of the test has been described in one of the publications [4] referred to, but it may be stated that the general technic is the same as that employed in the standard method for performing the complement fixation test for syphilis, used in all of the U. S. Army laboratories and described in my book on the Wassermann test.[5] The human hemolytic system is used. The blood serums to be tested are inactivated by being heated in a water bath at 56 C. for

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1. Craig, C. F.: Am. J. Trop. Med. **7**: 225 (July) 1927.
2. Craig, C. F.: Am. J. Trop. Med. **8**: 29 (Jan.) 1928.
3. Craig, C. F.: Proc. Nat. Acad. Sc. **14**: 520 (July) 1928.
4. Craig, C. F.: Am. J. Trop. Med. **9**: 277 (Sept.) 1929.
5. Craig, C. F.: The Wassermann Test, ed. 2, St. Louis, C. V. Mosby Company, 1921.

one-half hour, and the antigenic extract is used without dilution because of its weakness in antigenic property.

MATERIAL

The individuals tested have been mostly patients in the Walter Reed U. S. Army General Hospital, where the test is being used as a semiroutine test in suspicious cases. The patients tested have been suffering from a great variety of disease conditions, and, in addition, numerous normal persons have been used as controls. During the experimental work on the reaction, the serums were taken at random from specimens submitted to the serologic laboratory of the Army Medical School by the hospital for the Wassermann and Kahn tests, but during the past year and a half, as the results appeared to be valuable in diagnosis, most of the serums tested have been from patients referred to our laboratory for that purpose. After each serum has been tested, a specimen of the feces of the patient, whether the result of the test was positive or negative, has been examined microscopically and culturally for *Endameba histolytica*. Thus, all of the results reported in this communication have been checked by such examinations of the feces of the individuals furnishing the blood serums tested.

RESULTS OF THE TEST

More than a thousand serums from as many individuals have been tested, but this report concerns only those tests in which the feces have been checked for the parasite, numbering 689, of which eighty-four, or approximately 12 per cent, gave a positive reaction, and 605, or 88 per cent, gave a negative reaction.

The character of the reaction with this test is usually very clear cut, being either 3 plus or 4 plus when read on a 4 plus scale. Thus, of the eighty-four positive cases, no less than seventy-one gave a 4 plus reaction and the remainder a 3 plus reaction. It should be remembered, in considering the number of positive results, that many of the patients tested have served in tropical regions or have presented symptoms of derangement of the gastro-intestinal tract.

In the eighty-four positive cases, a check of the feces for *Endameba histolytica* resulted in the demonstration of this parasite in seventy-seven cases, or almost 92 per cent. In thirteen, or about 8 per cent, we were unable to find the parasite, but this negative finding cannot be considered absolutely conclusive because of the fact that in most of these cases it was not possible to make more than one or two examinations of the feces.

Of the eighty-four positive cases, fifty-seven showed infection with *Endameba histolytica* alone; ten were mixed infections with *Endameba histolytica* and *Endameba coli*; five with *Endameba histolytica* and *Endameba* (*Endolimax*) *nana*; two with *Endameba histolytica, Endameba nana* and *Endameba coli*; two with *Endameba histolytica* and *Chilomastix mesnili*; two with *Endameba histolytica* and *Giardia intestinalis,* and two with *Endameba histolytica* and *Trichomonas hominis.*

There were 605 cases in which the feces were checked that gave a negative result. In these, *Endameba histolytica* was found in five cases, or 0.8 per cent. One of these cases was a severe acute case of amebic dysentery; one was an abscess of the liver; one was symptomless, while the other two showed gastro-intestinal symptoms that were suspicious. Therefore, it is evident that persons infected with this parasite do not all give a positive reaction, but the percentage is apparently very small.

Of the 605 patients giving a negative reaction, there were no less than 211, or 34.8 per cent, infected with other species of protozoa. Thus, there were ninety-six, or 18.8 per cent, infested with *Endameba coli*; sixty, or 9.9 per cent, infested with *Endameba nana*; three, or 0.4 per cent, infested with *Iodameba williamsi*; twenty-five, or 4.1 per cent, with *Chilomastix mesnili*; sixteen, or 2.6 per cent, with *Trichomonas hominis,* and eleven, or 1.8 per cent, with *Giardia intestinalis.* There were eleven mixed infestations with *Endameba coli* and *Endameba nana*; six with *Endameba coli* and *Chilomastix mesnili*; four with *Endameba coli* and *Giardia intestinalis,* and three with *Endameba coli* and *Trichomonas hominis.*

That infestation with other species of amebas found in the intestinal tract of man does not lead to a positive complement fixation reaction with this test is evidenced by the fact that 159 of the patients giving a negative reaction, or 26.2 per cent, were infested with some species of ameba other than *Endameba histolytica.*

Practically all of the 605 individuals giving a negative reaction were patients in a general hospital suffering from a wide range of acute and chronic disease conditions, so that it appears justifiable to conclude that the test is not positive in other diseases, with the exception of certain rare cases of syphilitic infection.

RELATION TO THE WASSERMANN AND KAHN REACTIONS

As the antigen used in this test is an alcoholic extract not only of *Endameba histolytica* but of the bacteria that may be growing with it in the cultures, and of material from the culture medium, it was believed possible that the results obtained with the test might be due to the nonspecific substances in the extracts and similar to the results obtained in the Wassermann test with alcoholic extracts of normal tissues. For this reason, and in order to obviate such a source of error and ascertain whether the positive results were due to syphilis, a check of the serums tested has been made by subjecting them to a Wassermann and Kahn test in addition to the complement fixation test for *Endameba histolytica.* The results of this check have shown that thirteen, or 15.5 per cent, of the eighty-four patients giving a positive reaction also gave a positive Wassermann and Kahn reaction, while seventy-one, or 84.5 per cent, gave a negative Wassermann and Kahn reaction. Of the 605 individuals giving a negative reaction with the complement fixation test for *Endameba histolytica,* fifty-four, or approximately 9 per cent, gave a positive Wassermann and Kahn reaction, 551, or 91 per cent, gave a negative Wassermann reaction, and 549, or 90.9 per cent, gave a negative Kahn reaction. It will thus be seen that there were slightly more than 6 per cent positive Wassermann and Kahn reactions in those giving a positive result with the complement fixation test for *Endameba histolytica* than in those giving a negative result. It is also significant that, of the thirteen individuals giving a positive reaction to all three tests, no less than eight failed to show *Endameba histolytica* in the feces, although it may be stated that in these cases not more than two examinations were made of the feces. Admitting that all of these individuals were free from infection with this parasite, it would follow that the false positive results were due to infection with syphilis. However, in interpreting these figures it should be remembered that at least half of the serums tested were selected at random from specimens submitted to the serologic laboratory of the Army Medical School for the Wassermann and Kahn

tests, a majority of the patients being in the venereal wards of the hospital.

The considerably larger percentage of cases showing a positive reaction with this test and also a positive Wassermann and Kahn reaction, and the failure to find *Endameba histolytica* in the feces in more than half of such cases, appears to indicate that, in rare instances, patients suffering from syphilis will give a positive reaction with this test and that this disease must be eliminated in patients giving a positive reaction with this test unless the result is supported by the finding of the parasite in the feces.

PRACTICAL VALUE OF THE TEST IN DIAGNOSIS

In view of the difficulty of differentiating *Endameba histolytica* from other species of ameba that commonly occur in the human intestine, it is obvious that if a serologic reaction could be elaborated which could be depended on to give a positive result in most cases of the infection, it would be of considerable value in the diagnosis of the condition. Comparatively little work has been done on complement fixation in amebic infection. Izar,[6] in 1914, using an aqueous antigen prepared by extracting fecal material containing *Endameba histolytica* and liver abscess pus, reported positive results with the blood serum of five infected persons and three infected cats. In 1920, Hage[7] repeated Izar's experiments but was unable to confirm them and concluded that the test antigen contained too little reactive substance. In 1921, Scalas[8] attempted to improve Izar's methods of preparing antigen, using an aqueous extract of mucous flakes from feces containing *Endameba histolytica* and obtained positive results in three infected persons and negative results in a case of bacillary dysentery and in a normal person. These observations are the only ones that I have been able to collect from the literature on the subject, and it is evident that the antigens used could not be expected to give consistent results, owing to their weakness in antigenic substances.

In our work we have endeavored to prepare an antigen which is strong enough in antigenic material to react in the majority of patients infected with this parasite, and I believe that this result has been attained, as shown by the large percentage of patients who have reacted and have been proved to be infected by the finding of the parasite in the feces. While it is true that a diagnosis could have been made by the finding of the parasites in the feces, it is also true that numerous cases have been discovered by means of the complement fixation test which would otherwise have been overlooked. These cases have for the most part been very important from the standpoint of diagnosis, several being instances of amebic abscess of the liver which might have been missed entirely or wrongly diagnosed, while a large number of individuals suffering from obscure intestinal conditions have been proved to be infected with *Endameba histolytica* by means of this test alone, the parasite afterward being found in the feces.

When the services of a competent protozoologist or of one trained in the differentiation of the parasitic amebas of man are available, the complement fixation test would be of comparatively little practical value; but when such services are not available, it is believed that this test may be a most valuable adjunct to diagnosis. It is unnecessary to stress here the difficulty of differentiating the various amebas of the human intestine, and it is most unfortunate that such differentiation is being attempted at this time by many technicians who are entirely untrained in protozoology. The use of the complement fixation test, under such conditions, would be of service in checking the diagnosis made by untrained or improperly trained laboratory workers.

In view of the elaboration of new and very efficient methods of treatment of amebic infection, the recognition of latent infections and infections showing atypical symptoms is of the greatest importance, as proper treatment usually results in the permanent disappearance of the parasite. It is in this class of case that the complement fixation test should prove of great value when expert microscopic diagnosis cannot be obtained. That the reaction is a specific one is shown not only by the positive results obtained in a large proportion of individuals infected with *Endameba histolytica* but by the fact that proper treatment, followed by the disappearance of the parasite, is also followed, within from three to six weeks, by the disappearance of the positive reaction. This has been the invariable result in all of our cases that have been treated properly, and when the reaction has persisted, repeated courses of treatment have eventually resulted in the disappearance of the reaction, provided the amebas were eliminated.

At the present time the practical value of the test is limited by the difficulty of preparing the antigenic extract. For this purpose it is necessary to extract a large number of cultures of *Endameba histolytica,* and the cultivation of this organism is difficult even in experienced hands, especially when the cultures have to be maintained for weeks and months in order to make it possible to keep such antigenic extracts on hand. It is also true that not all extracts possess enough antigenic properties to be of practical use, even though the same strain of the organism is used and the method of extraction is standardized. The reason for this I am unable to state, but we have obtained several inert extracts from the same strain of *Endameba histolytica* that has given us our best antigenic extracts, although the same technic was employed in extraction. Until it is possible to cultivate *Endameba histolytica* in pure culture, one must expect to obtain anomalous results at times, owing to the fact that the extracts are made from mixed cultures of the ameba and bacteria. All of our extracts have been prepared from a single strain of *Endameba histolytica* first isolated by Capt. J. H. St. John nearly four years ago. Whether other strains of the organism would give as good results has not been determined as yet, and it is hoped that the publication of this paper will stimulate research in this direction.

The technic of this complement fixation test, while similar to that of other complement fixation tests, is rendered more difficult by reason of the fact that the antigenic extract is so weak in antigenic properties that it has to be used without dilution. For this reason every step of the technic must be thoroughly controlled and the test should be performed only by a qualified serologist and the results checked, whenever possible, by an examination of the feces by one skilled in the differentiation of the various species of amebas occurring in the intestine of man. At the present time I do not feel that this test is on the practical basis that a complement fixation test should be before it is relied on alone in the diagnosis of a specific infection. The difficulties inherent in the preparation of the antigen and in the technic are such that in its present stage of develop-

6. Izar, G.: Arch. f. Schiffs- u. Tropen-Hyg. **18**: 36, 1914.
7. Hage, F.: Deutsche med. Wchnschr. **47**: 682 (June 17) 1920.
8. Scalas, L.: Riforma med. **37**: 103 (Jan. 29) 1921.

ment it could be performed only in laboratories where the services of a serologist and protozoologist are available. However, it is felt that further research will simplify the technic of preparing the antigenic extract and that eventually the test will be comparable to the complement fixation test for syphilis as regards practical utility.

PREMENSTRUAL ELEVATION OF TEMPERATURE IN THE TUBERCULOUS WOMAN

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The lack of any clear cut conception of the temperature changes to be expected during the days of and preceding the menses of normal and tuberculous women makes an analysis of a representative group of patients desirable. While it is well known in a general way that the woman suffering from tuberculosis tends to have a slightly elevated temperature during the premenstrual week, there is a strange diversity of opinion regarding the degree of elevation to be expected in patients who eventually go on to recovery, the duration of the rise, its relation to the menses, and the influence, if any, of the amount of tuberculosis which the patient presents.

Bezançon's [1] careful study of the temperature variations in the normal organism presented a number of fundamental facts. Using the rectal temperature, he established as normal values, after at least one hour of repose, the following: between 7 and 8 a. m., from 97.9 to 98.2 F.; between 2 and 6 p. m., from 98.9 to 99.3 F. A temperature of 99.5 is a little too high and 100 is definitely pathologic; around 9 p. m. the temperature falls again to 98.6. He regards the rectal and vaginal temperatures as usually being 0.2 degree higher than those taken by mouth. He found that intellectual work raises the temperature as much as 0.1 degree C. in one hour and that digestion had but little influence unless the patient was suffering from indigestion or the diet was rich in carbohydrates, proteins or sugars.

Wunderlich,[2] after having indicated that normal menstruation in healthy women ordinarily has no effect on the body temperature, adds that sometimes there are rises in temperature during the menses which are sometimes accompanied by other functional disturbances and sometimes constitute the only pathologic phenomenon.

Reinl [2] studied the temperature curves of eight women whom he considered healthy and concluded that the temperature rose premenstrually in many cases and fell gradually during menstruation. Rabuteau [2] also maintained that there was really a premenstrual rise and a menstrual lowering of temperature in even the healthiest women.

The work of Giles,[2] who studied fifty periods in forty-five women, shows that the temperature reaches its minimum about the middle of the intermenstrual period, rises gradually to attain its maximum two days before the menses appear, and then falls abruptly the evening before the appearance of the menses. The temperature then rises slowly during the first week following the menstrual flow, to fall again and reach its minimum about the middle of the intermenstrual period.

Mme. Francillon,[2] on the contrary, found no characteristic change, and Riebold, after taking the temperatures of 2,000 sick women during the days that preceded the menses over a period of two years, stated that thirty-seven of the eighty-seven women in his series who had premenstrual fever three days before the onset of the menses showed tuberculous lesions, and that the other fifty had some pathologic condition not stated. In only four cases did he find a premenstrual fever in normal healthy women, and here he raises the question of constipation.

Bezançon, after reviewing the reports of all the available authorities, concludes that there may be a premenstrual fever in several types of women who are not tuberculous and that a premenstrual fever does not necessarily indicate even a latent tuberculosis. He feels that in these so-called susceptible patients the premenstrual rise in temperature begins with the rupture of the graafian follicle and proceeds with the formation of the corpus luteum, whose secretion is a vasodilator. And finally, as he points out, the synergistic action of the thyroid must be taken into consideration, as a veritable state of hyperthyroidism, latent in some and marked in others, may exist. It is a sympathicotonic state which explains the ease of congestive phenomena, vasomotor instability, and tendency to hyperthermia that these individuals present.

It is beyond the scope of this paper to review the many and conflicting opinions regarding the question of menstrual fever in healthy and tuberculous women or to quote the often weird and naive conclusions that some writers claim to be able to draw from these temperature reactions. Nevertheless, mention must be made of Kaufmann's [3] report of seventy-eight tuberculous women, in only 14.3 per cent of whom she found a premenstrual increase in temperature, while 21.4 per cent showed a variable reaction and 41.4 per cent an actual decrease, and of Beekman's [4] studies, on the other hand, of 300 tuberculous women who showed a premenstrual rise in 76 per cent of the active cases. He used 98 F. as the normal temperature.

We have studied the records of 386 women who have been patients at the Stony Wold Sanatorium and who have been discharged with the tuberculosis apparently arrested or improved. From this number, five patients 14 years of age or under who showed no premenstrual rise in temperature, and in whom there might be a question whether the menses were actually established, have been subtracted. Seventeen patients discharged because the diagnosis of tuberculosis was unwarranted have also been taken out of this series. This leaves a total of 363 tuberculous women whose records for the entire period of their sanatorium treatment are available for study.

In reviewing the records at our disposal, a number of cases were found in which a subnormal temperature was the rule except during the premenstrual period, when the temperature rose to 98.6 F. Such cases have not been included in this report, as we regard them as being too inconclusive for our purpose.

1. Bezançon, F.: La temperature normale du corps humain, Ann. de méd. **16**: 496 (Dec.) 1924.
2. Quoted by Bezançon (footnote 1).
3. Kaufmann, S.: Premenstrual and Intermenstrual Decrease in Temperature in Tuberculosis, Ztschr. f. Tuberk. **53**: 97-192, 1929.
4. Beekman, E.: Influence of Menstruation on Temperature Curve of Tuberculous Women, Ztschr. f. Tuberk. **52**: 273-368, 1928.

Nor have we thought it advisable to adopt the usual 98.6 F. as the normal mouth temperature, believing with Butler [5] and others that each individual has his own normal body temperature and that variations should be calculated from that figure. We have therefore adopted as the normal in a given case the average temperature for the month exclusive of the premenstrual week and have calculated any deviations from that figure as being due to menstruation.

The oldest patient in this series was 44 and the youngest 15. The average age was 24.6 years.

The cases have been classified as minimal, moderately advanced and far advanced on the basis of the standards adopted by the National Tuberculosis Association. The number in each group was as follows: minimal, 77; moderately advanced, 238; far advanced, 48.

The incidence of premenstrual fever in these groups and for the series as a whole is shown in table 1. It

TABLE 1.—*Incidence of Premenstrual Fever*

	Number	Per Cent
Total showing premenstrual rise in temperature..	154	42.4
Minimal	29	37.6
Moderately advanced.....	108	45.8
Far advanced	17	35.4

will be seen that less than half of all the cases showed a premenstrual rise and that the amount of tuberculosis from which the patient was suffering was of no importance in this analysis.

One patient in the nontuberculous group showed a rise in temperature from 98 to 99.8 F., which began from seven to twelve days before the menses started and fell the day the flow was established. As no further data are available to explain this variation from the remainder of the nontuberculous group, we withhold any comment.

The extent of the premenstrual rise in temperature, the number of days that the increase in temperature became manifest before the menses appeared, and the duration of the rise is shown in table 2. Here again

TABLE 2.—*Variations in Premenstrual Rise in Temperature*

	Premenstrual Rise in Degrees F.	Number of Days Before Menses That Rise Began	Duration of Rise in Days
Minimal	1.41	9.36	8.81
Moderately advanced.	1.29	8.56	7.68
Far advanced.....	1.60	8.85	7.38

the extent of the tuberculous lesion seemed to have but little influence—a result quite different from that which we had anticipated.

We have been unable to classify our cases into the clear cut groups described by Caussimon,[6] nor do we believe that the presence or absence of a premenstrual fever is of much prognostic significance.

SUMMARY AND CONCLUSIONS

The records of 363 tuberculous women have been reviewed with especial reference to the occurrence of a premenstrual fever. The cases were subdivided according to the classification of the National Tuberculosis Association, and the incidence of a premenstrual rise in temperature, the duration of such a rise and the number of days before the onset of the menses that the rise occurred were determined.

From the results of this analysis of the sanatorium records of 363 tuberculous women who were discharged with the disease apparently arrested or improved, we conclude that:

1. Some premenstrual rise in temperature is shown by 42.4 per cent of tuberculous women.
2. The extent of the tuberculous lesion seems to have no influence on the frequency with which this rise occurs.
3. The rise in temperature varies from 1.29 degrees F. in the moderately advanced cases to 1.41 degrees in the minimal and 1.6 degrees in the far advanced cases.
4. The number of days before the menses are established that the rise begins is about nine days for all grades of tuberculosis.
5. The rise in temperature lasts from 7.38 days in the far advanced cases to 8.81 days in patients with minimal tuberculosis.

6 Church Street.

5. Butler: Diagnostics of Internal Medicine, ed. 2, New York, D. Appleton & Co.
6. Caussimon, J.: Clinical Value of Change of Temperature Curve During Menstruation in Tuberculous Women, Presse méd **37**: 1557-1572 (Nov. 30) 1929.

BRONCHOMYCOSIS

REPORT OF TWO CASES *

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The etiologic relationship of certain forms of budding fungi included under the general name of *Endomyces* has been described by Castellani,[1] who in 1912 called attention to a number of chronic bronchial infections in Ceylon in which tubercle bacilli in the sputum were never demonstrated. Such sputum, however, constantly contained various yeastlike organisms which he divided into several groups. Later,[2] however, he enlarged this classification of the organisms that produced bronchomycosis, and in this paper he refers to certain bronchial infections in Ceylon caused by an organism known as *Monilia*. This term, according to him, should include all the organisms of the family *Oosporaceae* Saccardo, 1886. The vegetative body of these organisms forms a mass of mycelial threads and free budding forms. On culture mediums the old yeastlike forms are more numerous, while the mycelial threads or hyphae are very scarce or absent. When present, they are short and narrow. This family produces gas in various sugars, and Castellani's article contains a table showing the gas formation and reaction in milk of the genus *Monilia*.

Certain monilias, such as *Monilia metalondinensis*, when injected into the lungs of rabbits in quantities of 1 cc. of a slant agar growth, produced numerous white nodules in from fifteen to twenty days. The microscopic examination showed a center composed of masses of small cells and polymorphonuclear leukocytes surrounded by a ring of phagocytes and endothelial cells and a few giant cells and eosinophils. At times the

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† Dr. Stokes died, February 10.
1. Castellani, Aldo: Lancet **1**: 13 (Jan. 6) 1912.
2. Castellani, Aldo: New Orleans M. & S. J. **79**: 21 (July) 1926.

center of the nodules was caseous. Weigert's bacterial stain showed a small number of monilias.

Clinically the disease may be either mild or severe. In the former type there is no fever; expectoration is mucopurulent; physical examination shows only a few râles, and the condition may be cured spontaneously in from one to several months. The mild condition may, however, turn into the severe type, which can also be present from the beginning. The patient becomes emaciated; there is fever; the sputum is often blood-stained, and examination of the lungs may show areas of dulness, râles, and pleural friction sounds. This type may terminate fatally.

FIG. 1.—Trunk markings and chronic interstitial fibrosis in case 1.

The diagnosis is based on failure to demonstrate the tubercle bacillus and the constant determination of yeastlike bodies in the sputum. These monilias can be cultivated by smearing some of the sputum over the slanted surface of Sabouraud's agar medium, and the special species may be detected by inoculating pure cultures of the organism into milk, gelatin and a number of carbohydrates. The treatment consists in the use of potassium iodide, and autogenous vaccines are also said to be useful.

Steinfield [3] isolated *Monilia* from cases of asthma and chronic bronchitis, and vaccines and potassium iodide treatment were beneficial to the patients. De Potter [4] isolated *Monilia albicans* in a case of chronic bronchitis, and the organism produced a general mycosis in various laboratory animals. Shaw [5] has also isolated a species, *Monilia richmandi,* from a case of bronchomycosis.

Kotkis, Wachowiak and Fleisher [6] have found *Monilia* in the sputum in five of fourteen cases of bronchitis associated with asthma. A table shows the acid and gas formation in a number of sugars, and the growth in milk and gelatin, but these authors made no attempt to recognize the various species. Two of the patients showed improvement when treated by vaccines.

Stovall and Greeley [7] report four cases of bronchomoniliosis in detail in which dyspnea on exertion, chills and fever, loss of weight, pulmonary dulness on percussion, bronchial breathing, cough, purulent and blood-stained expectoration, and anemia were all noted. Roentgenograms showed peribronchial and pleural thickening, especially about the hilus, and the sputum contained typical yeast cells resembling *Monilia.* This species was recognized by growth on the various culture mediums, and the organisms produced lesions in the experimental animals.

McKinney [8] isolated twelve yeastlike strains from cultures from the sputum, throat, mouth, stool and the pus of human beings. Six of these strains proved pathogenic for guinea-pigs at times, three of them causing the death of the animals, and the other three causing inflammatory reactions. Immune serum was prepared from all of these strains, and each one of them agglutinated with the majority of the serums from the other heterologous strains. They can therefore be roughly grouped under one immunologic classification, but when tested with an immune serum from commercial yeast with a titer of 5,120 these strains failed to agglutinate in any appreciable dilution with a serum made from the commercial yeast. The commercial yeast also failed to agglutinate with the immune serums made from the pathogenic strains. These pathogenic strains, therefore, can be separated as a distinct immunologic group from the commercial yeast strains.

Gilbert and Groesbeck [9] have isolated strains of *Monilia* which were pathogenic for white rats from the sputum of eleven patients. These patients often showed symptoms that suggested pulmonary tuberculosis, such as cough, fever and hemorrhages, but other conditions noted were chronic bronchitis, laryngitis and pulmonary abscess. The cells isolated from the sputum were reproduced by budding, and short hyphae were often seen. The cultures grew on agar and other routine mediums, and gas production was found in dextrose, saccharose, maltose and other sugars. Intravenous inoculation was usually fatal to white rats in from one to five days, and the most characteristic lesion was the presence in the various viscera of foci of necrosis, with infiltration by mononuclear cells, and containing numerous colony-like masses of *Monilia.*

On the basis of the literature that has been cited, the genus *Monilia* can therefore be described as an organism growing preferably on Sabouraud's agar, producing an abundant creamy growth with circular, creamy, smooth colonies elevated in the center. These organisms are all gram-positive, oval cells, ranging in dimensions from 1 to 2 microns to 8 to 8 microns. Some strains produce long hyphae, while in others the hyphae are short and narrow or absent. Milk is usually rendered alkaline; gelatin is not liquefied, and there is acid and gas formation usually in glucose, levulose, maltose, galactose and sucrose, and occasionally in lactose and inulin. Mannitol, dulcitol, dextrose, raffinose, arabinose and xylose show no gas formation. These species are usually pathogenic for such animals as guinea-pigs and rabbits, but are even more pathogenic for white rats. They form a special immunologic group, as determined by agglutination and complement fixation tests, which separates them from the ordinary commercial yeast.

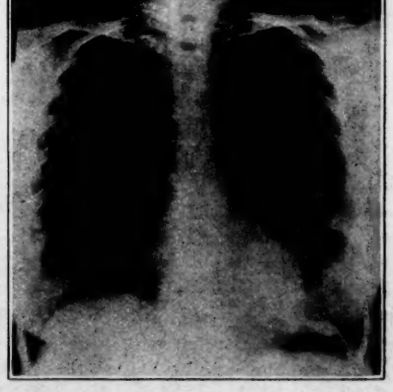

FIG. 2.—Roentgenographic changes apparent in case 2.

REPORT OF CASES

CASE 1.—Our first patient studied was under the care of Dr. Kiser.

History.—A white woman, aged 33, complained of a harassing, paroxysmal cough of several months' duration,

3. Steinfield, E.: J. Lab. & Clin. Med. **8**: 744 (Aug.) 1923.
4. De Potter: Compt. rend. Sec. d. biol. **89**: 424, 1923.
5. Shaw: Science **64**: 300, 1926.
6. Kotkis, A. J.; Wachowiak, M., and Fleisher, M. S.: Relation of Monilia to Infections of Upper Air Passages, Arch. Int. Med. **38**: 217 (Aug.) 1926.
7. Stovall, W. D., and Greeley, H. P.: Bronchomycosis, J. A. M. A. **91**: 1346 (Nov. 3) 1928.
8. McKinney, M. J.: J. Infect. Dis. **44**: 47 (Jan.) 1929.
9. Gilbert and Groesbeck: Am. J. Pub. Health **20**: 1 (Jan.) 1930.

and had lost 20 pounds (9 Kg.) during the year. This loss of weight and the increased metabolic rate noted on examination were probably due to an associated toxic adenoma of the thyroid gland.

The symptoms worth noting in the physical examination were coarse, sibilant râles throughout the chest, but with a

Fig. 3.—Section of a pseudotubercle of the rat occurring just below the upper surface of the liver. The caseation, nuclear fragmentation and the epithelioid and lymphoid zones are well shown.

normal percussion note; roentgen examination showed rather heavy trunk markings with some extension of markings in the apexes. Figure 1 shows to advantage the trunk markings and chronic interstitial fibrosis in this case.

Microscopic examination of the sputum showed many pus cells, numerous streptococci, and numerous budding yeast cells in repeated examinations, in none of which was the tubercle bacillus detected. The urine showed a trace of albumin, granular and hyaline casts, and pus cells.

Course.—The basal metabolism increased from plus 5 to plus 52 in ten months. The disease since has been uneventful, the sputum showing decreasing numbers of yeast cells, but at no time have they been entirely absent. The blood counts were normal. The cough has become less severe, and there has been no further loss of weight. An observation made nearly two years after the first examination in this case showed that the cough was practically negligible and that there had been a marked improvement in the patient's general condition.

Bacteriologic Examination.—A pure culture of the yeast was obtained from the sputum, and the following characteristics were noted:

Morphology: The yeast when examined in the sputum consisted of round or oval cells frequently showing small buds varying in size, with an average length of about 4 microns, the organism being gram-positive. In young cultures in Sabouraud's medium the morphology was similar to that described, but in older cultures the cells became much more elongated, often occurring in chains like linked sausages and at times forming structures resembling short hyphae. The elongated ovoid forms ranged from 5 to 7 microns in length, whereas the hyphae varied from 10 to 15 microns in length. These hyphae seemed to be growing directly from the mother cell as though they were elongated budding daughter cells.

Cultural Characteristics: The organism grew on agar and Sabouraud plates as large, moist, grayish white, convex, smooth-edged colonies, and under the lower power of the microscope the colonies were coarsely granular. They might be described as moruloid in appearance. On agar slants there was a diffuse, moist, filiform growth. Gelatin was not liquefied, the indole and the Voges-Proskauer tests were negative, and litmus milk remained neutral, but the reduction of nitrate to nitrite was positive.

Fermentation Reactions: Pure cultures of the organism were inoculated into arabinose, dextrin, dextrose, dulcitol, erythritol, galactose, glycerin, glycogen, inositol, inulin, lactose, levulose, maltose, mannitol, melezitose, raffinose, rhamnose, saccharose, salicin, sorbitol, trehalose and xylose, with the following results:

From 20 to 40 per cent of gas was produced in dextrose, levulose and trehalose, while only large bubbles were produced in galactose, maltose, mannitol and melezitose.

Animal Inoculations: A white rat injected subcutaneously with 1 cc. of the 10 cc. washings of a Sabouraud slant agar tube was chloroformed and examined at autopsy one month later, and a pea-sized, yellow, soft, caseous area was found beneath the subcutaneous layer of the abdomen at the site of injection. The various viscera were normal. The yeast cells were recovered by cultures from the local area, and stained sections showed that the mass consisted of connective tissue richly infiltrated with fibroblasts and containing areas of hemorrhage and many large pseudotubercles showing caseation, nuclear fragmentation, epithelioid and lymphoid cells but no giant cells. Another rat injected intraperitoneally when examined at autopsy one month later showed a pea-sized area near the umbilical region beneath the peritoneal surface extending through the abdominal muscles and surrounded by capsules of peritoneal and subcutaneous tissues. The viscera were all normal. The organism injected was recovered in pure culture from the local area, and microscopic examination showed a large conglomerate tubercle completely closed by muscular tissue and containing a central area of caseation with nuclear fragmentation and areas of calcification. The capsule consisted of epithelioid, lymphoid and giant cells. The

Fig. 4.—Same section as in figure 3 under a higher power. The caseation, nuclear fragmentation, loosely scattered epithelioid cells and the more densely packed zone of lymphoid cells are well shown, together with the normal structure of the liver beyond the pseudotubercle.

kidney was intensely congested and hemorrhagic; the liver and spleen were congested, and the submucosa tissue of the bronchi was extensively infiltrated by lymphocytes which produced a thickened area completely surrounding the lumen.

Our second case was studied clinically by Dr. Smith.

CASE 2.—*History.*—A man, aged 45, in November, 1928, was seized with a cough and shortness of breath, the latter more pronounced on exertion. He was often unable to lie flat at night, being propped up by pillows or resting in a rocking chair. Expectoration of a yellow, sticky fluid had

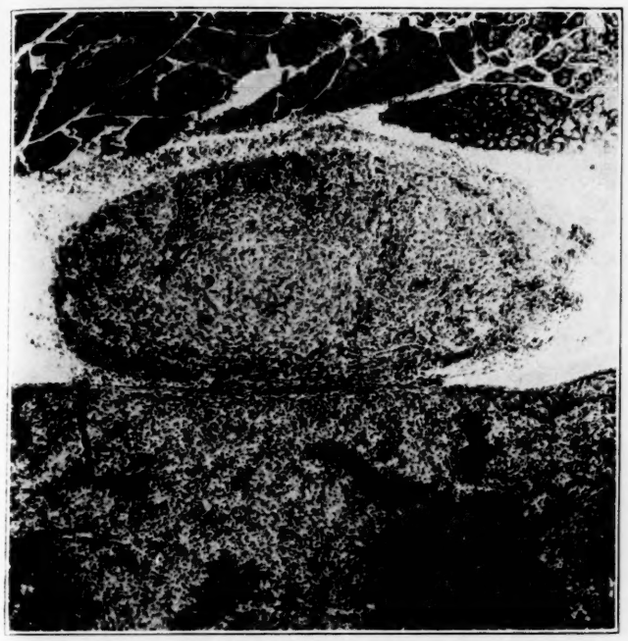

Fig. 5.—Section of a pseudotubercle on the peritoneal surface between the pancreas and the spleen. The histologic picture is that of a tubercle produced by the tubercle bacillus, with the central zone of epithelioid and giant cells and an outer zone of lymphoid cells.

been considerable but there was no loss of weight, although night sweats had occurred. Physical examination a month later showed harsh breathing, prolonged expiration, and wheezing throughout the chest, and a few fine cracking râles posteriorly in both bases. The percussion note was normal. Roentgen examination of the chest showed marked infiltration involving the greater part of the right lung and also the center of the left lung. There was very little infiltration in either apex. The lung changes were not characteristic and, while they might have been due to tuberculosis, the possibility of some unusual condition such as syphilis or a fungus infection was kept in mind.

Examination of Sinuses.—The frontal sinuses were normal. There was rather marked clouding of the left antrum, indicating the presence of pus or granulations, and slight clouding around the margins of the right antrum, indicating either a cavity, which was well drained at this time, or a thickening of the lining membrane from an old infection. All of the other sinuses were essentially normal. Figure 2 shows the roentgenographic conditions apparent in this case.

The condition remained about the same for several months, when an autogenous vaccine was made from the yeast obtained from the sputum, which will be described later. The concentration was 22,500,000 yeast cells per cubic centimeter, and the first treatment consisted of a subcutaneous injection of 0.05 cc. of the vaccine. No reaction being noted, the dose was increased by 0.05 cc. every three days until 0.25 cc. was given. After a four weeks' interval the treatment was resumed by increasing the dose 0.1 cc. every three days until 1 cc. was given. By this time the patient seemed much better, suffered less dyspnea and slept better. After the 1 cc. dosage was reached, nineteen more doses were administered at three day intervals, with considerable further improvement. The patient was then lost sight of and has not since returned for treatment.

Organism Isolated.—A number of microscopic and cultural examinations were made of the sputum in this case, and an organism was isolated repeatedly which corresponded in morphologic and cultural characteristics to the organism described in connection with the first case.

Animal Inoculations.—Intravenous injection of rabbits and intraperitoneal injection of guinea-pigs with washings of 1 cc. of the slant cultures were negative, but the white rat proved to be susceptible. One white rat given an intraperitoneal injection was chloroformed and examined at autopsy in a month, and a few pin-head sized, light yellow, formed nodules were found scattered over the mesentery, the upper surface of the liver and the anterior walls of the stomach. No invasion of the parenchyma of the organs was noted. Cultures from the nodules yielded a pure growth of the yeast, as already described. Microscopic examination of sections of the pseudotubercles on the surface of the stomach, liver, spleen, pancreas and mesentery showed essentially the same lesions, which were as follows:

The central area of the pseudotubercles showed calcareous deposits, nuclear fragmentation or caseation either alone or combined, and these areas were surrounded by a loosely woven zone of epithelioid cells containing occasional giant cells surrounded by a densely packed zone of small, round lymphoid cells. The lungs showed a few areas of intra-alveolar thickening.

The second white rat injected at the root of the tail with 1 cc. of 5 cc. of the washings from a slant tube of Sabouraud agar was killed in a month, and the organs were normal on inspection. Cultures, however, from the organs here described gave a pure growth of the yeast. The microscopic examination of sections showed that the liver contained a few small areas of focal necrosis consisting of a matrix of degenerated cells infiltrated by lymphoid and epithelioid cells and neutrophilic leukocytes. There were extensive hemorrhages beneath the capsular surface of the liver. In the lungs the tracheal submucosa was often greatly thickened by lymphocytes and the mucous membrane entirely or partially exfoliated, the lumen being filled with red blood cells, large and small lymphocytes and neutrophilic lymphocytes. There was also great thickening of many of the intra-alveolar walls, and small tubercles consisting of lymphoid and epithelioid cells were scattered through the lung tissue. The spleen showed great con-

Fig. 6.—Section near the edge of the tubercle illustrated in figure 5, showing epithelioid, giant and lymphoid cells.

gestion and large malpighian corpuscles. The accompanying photomicrographs show these changes in detail.

COMMENT

The interesting feature of these animal experiments consisted in the fact that we were able to produce

tubercles resembling those produced by the tubercle bacillus, the only difference being that this organism itself was absent and that we were able to demonstrate the yeast bodies in sections and by cultures.

SUMMARY

In two cases of extensive chronic interstitial fibrosis of the lungs the tubercle bacillus was not demonstrated in the sputum, but a form of yeast was obtained in both cases which in its morphology and cultural characteristics resembled *Monilia albicans* as given in Castellani's table,[10] with one exception; namely, in the liquefaction of gelatin and blood serum. This organism when injected into white rats produced a pathologic condition similar to that produced by the tubercle bacillus, but these lesions did not show any tendency to spread through the internal viscera and simply remained either as local processes or as scattered nodules on the serous surfaces.

Wallace and Tanner[11] isolated a specimen of yeast from sputum which resembles our organisms, even failing to liquefy gelatin, and as Castellani is quoted as saying that "some authorities state that the organism liquefies gelatin, others affirm the reverse," we have classified our organism temporarily as *Monilia albicans*, since the cultural characteristics correspond to those of this organism in every other respect. The isolation of these fungi from the sputum is, of course, no proof that they have produced the clinical conditions described here. The repeated absence of tubercle bacilli and of other organisms, however, suggests an etiologic relationship. The question can be finally settled only by a careful clinical study of cases as well as a thorough pathologic study of fatal cases. It is probably true that many such cases escape observation, and a careful examination of the sputum should be made in all cases in which repeated examinations for the tubercle bacillus are negative.

Castellani's classification of the *Hyphomycetes*, or *Fungi imperfecti*, is presented in the accompanying table, and it can be seen that our organisms belong to this subclass, being of the genus *Monilia*.

Classification of Fungi

Class	Subclass	Family	Genus and Species
Fungi	Fungi imperfecti	Oosporaceae	Genus Monilia Persoon Genus Oidium Link

Fig. 7.—A small pseudotubercle on the peritoneal surface of the stomach, showing much central nuclear fragmentation and calcification.

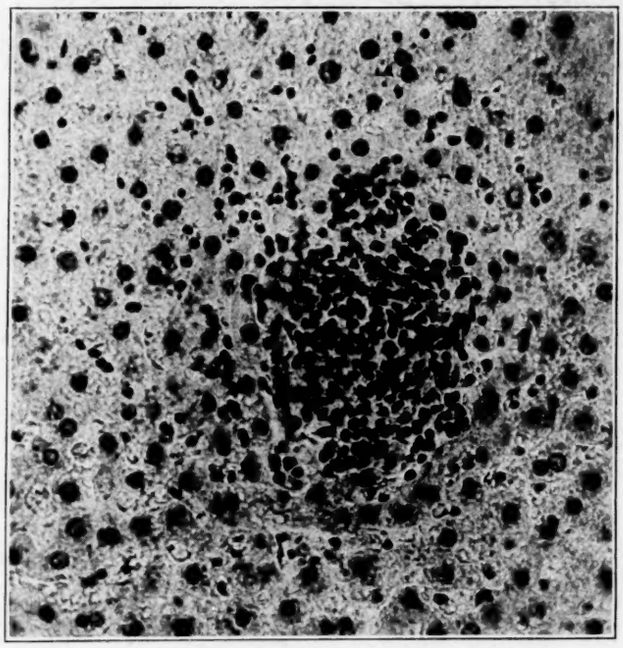

Fig. 8.—A small pseudotubercle in the liver produced by injecting the yeast culture into a vein in the tail of the rat.

Problems Involved in Prognosis.—Prognosis, or forecasting what will happen, is a very important function of medical men, as it supplies what everyone is anxious to know when illness overtakes them or their relatives. The power of predicting the duration and outcome of a given case of disease depends on several data: first on accurate knowledge of the nature of the illness (diagnosis), secondly on knowledge of its natural history, course and significance, of the complications that may occur, the sequelae or results that may follow, and how far treatment can influence it beneficially, and thirdly on acquaintance with the individual patient's constitution, family history, inherited characters, mental traits, previous health and habits of life. Prognosis thus involves problems all of which may not be capable of solution, particularly during the initial stages, and is probably the most difficult part of medicine. It may be vitally important for a man with many responsibilities to know if he must face death at no long interval, and in these circumstances he should share the medical man's honest opinion, but a fatal prognosis must be given only when there is absolute evidence. In cases of doubt an optimistic view is better for all concerned, and even when there is every reason to anticipate the worst, the unasked warning may be harmful, and many patients know, though they do not really wish to be told, what is before them. —Sir Humphrey Rolleston: In "Human Biology and Racial Welfare," Paul B. Hoeber, Inc., New York, 1930.

10. Castellani and Chambers: Manual of Tropical Medicine, ed. 2, 1913, p. 822.
11. Wallace, G. I., and Tanner, F. W.: Am. Rev. Tuberc. **15**: 373 (March) 1927.

FRAGILITY AND DEFICIENT HEALING OF BONE IN POLIOMYELITIS *

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Antedating roentgen-ray assistance, Achard and Joffroy [1] described the bone changes in an extremity paralyzed by poliomyelitis. In normal tissue they noted the projections of bone where the skeleton becomes continuous with the fibrous structures and deduced from this finding that the action of the muscles and the gliding of the tendons produce impressions and irregularities. Therefore, they formulated the belief that the shape and structure of bone depends on its muscular connections. In a paralyzed member, bone atrophy runs parallel with the muscle wasting and proceeds with modification in the size of the vessels of the region and the structure of the subcutaneous tissues. In conditions of complete atrophy of muscle, it is easy to understand that the bone left in an inert mass of soft tissue is no longer subject to stresses and strains. Consequently, it develops equally everywhere and takes an indifferent form. The result is a smooth, glossy structure of uniform thickness. The observers concluded that it was likely that the motor cell of the spinal cord exerted a trophic influence not only on the muscle of the region supplied but all of the tissue, including bone. Following the introduction of the roentgen ray, Achard and Levi [2] reviewed the material and described the transparency of the bone, besides confirming the smaller diameters, thinned cortex and smoothness. They then added that the texture and general morphology undergo change besides the change in the mass of the bone. Since the diminution in length was less marked than the other changes, they established the fact that the process is a diaphyseal rather than an epiphyseal atrophy.

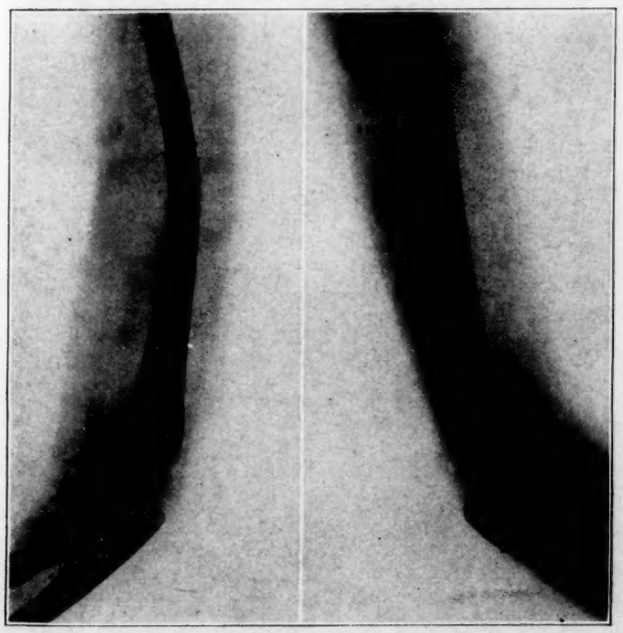

Fig. 1 (case 1, Oct. 18, 1921).—Complete fracture of the right humerus at the middle of the shaft, with some posterior angulation. Note that the right humerus is considerably smaller than the left. Atrophy is indicated in the thin cortical layer, the thin calcification of the medulla and the shadow thrown by the soft tissues. The epiphyseal ends show less calcification because of the poor development of the muscles and their attachments.

From these beginnings, the idea of bone atrophy accompanying nerve lesions was spread generally and soon appeared in the textbooks. Oppenheim [3] remarks that there is a true atrophy in poliomyelitis as well as shortening, although more rarely the opposite condition, lengthening, may occur, according to Seeligmuller. The latter regarded the changes as trophic, and even then this view was disputed. Willard [4] mentions bone atrophy following the acute process of poliomyelitis. Since that time reports have appeared by Hassin and his associates [5] describing changes in cases of thirty-seven and fifty-nine years' standing. Their pictures agreed with earlier descriptions. After comparison with the changes in a lesion of the lumbosacral plexus, these authors, too, conclude that the bone changes of poliomyelitis are characteristic for that specific disease. This conclusion is open to objection, as will be seen further. Of significance in their report is their opinion that regeneration must be meager, since growth, nutrition and function are impaired, and that healing may be slow or absent following trauma or other lesions.

Fig. 2 (case 1, Dec. 22, 1921).—Refracture at point of old fracture. Contrast the two sides.

With the increased interest in skeletal changes accompanying nerve disorders, the question was raised, Are the bone changes due to trophic interference or are they simply the result of nonuse? Allison and Brooks [6]

* From the Pediatric and Surgical Departments of the Post Graduate and Cook County Hospitals.

1. Achard and Joffroy: Arch. de méd. expér. et d'anat. **1**: 57, 1889.
2. Achard and Levi: Nouv. iconog. de la Salpêtrière **10**: 324, 1897.
3. Oppenheim: Lehrbuch der Nervenkrankheiten, Berlin, S. Karger, 1908.
4. Willard: Surgery of Childhood, Philadelphia, J. B. Lippincott Company, 1910.
5. Hassin, G. B.; Lukas, Christine; and Brown, R. O.: Roentgenographic Bone Changes in a Case of Poliomyelitis, J. A. M. A. **65**: 1459 (Oct. 23) 1915. Hassin, G. B.; Baker, E. L., and Wakefield, Howard: Roentgenographic Bone Changes in a Second Case of Old Poliomyeltis, ibid. **85**: 267 (July 25) 1925.
6. Allison, Nathaniel; and Brooks, Barney: Surg. Gynec. Obst. **33**: 250 (Sept.) 1921.

conclude from their experimental studies that all the changes can be explained on the latter hypothesis. The changes in the bones of animals after nonuse were the same whether the condition was effected by nerve paralysis, joint injuries or simple fixation in a plaster cast. The atrophy was directly proportional to the degree of nonuse. The changes were quantitative and

Fig. 3 (case 2, Jan. 14, 1926).—Fracture of right femur showing median displacement dorsal of the distal fragment. There is a limited, probably inadequate, callus. Note the bone atrophy, especially in the upper half.

not qualitative. The effects were seen in size, shape, thickness, length, weight and texture, and accounted for the changes in gross anatomy, breaking strength and roentgenographic observations. More interesting was the fact that regeneration was unaffected, so that a section removed from the paralyzed member was viable when transplanted to the normal extremity. Allison and Brooks support their experimental observations with clinical data.[7] They cite cases of poliomyelitis, fractures, osteomyelitis, nerve injuries, deformities and other conditions of nonuse. Experimentally, the atrophic process begins in ten days. It is well marked in ten or twelve weeks, and after from six to twelve months there is little further change. Confirming these observations, Barbé [8] found rarefaction in the bones of the scapular girdle in a case of progressive muscular dystrophy which he stated seemed to be related to the muscular lesion at the scapular level. On the other hand, in cases associated with unusual muscular tone, such as cases of Little's disease, Rohde [9] found changes indicating hypertrophy in six out of seven cases, in three of which changes were found in the bone as well as the joints. He explains that the new formation occurs where the contracted muscles have broad and well vascularized attachments to the periosteum and bone.

REPORT OF CASES

CASE 1.—This case is described because it involves several processes related to the poliomyelitic lesion; namely, atrophy, tendency to fracture and regeneration. The patient was a girl, aged 5 years. The circumstances of her admittance were interesting. Her mother rushed up to the hospital desk with the excited pronouncement that the child had been thrown to the sidewalk by playmates and had broken her right arm. The thought occurred to us that there must be a complete break with marked deformity since the mother recognized the condition. Corollary to that conclusion, we decided that there must be some unusual factor to produce a complete noticeable break rather than a greenstick fracture in a young child. Then the mother cried out that the fracture was in the bad arm. A glance at the child explained the situation. The child was robust, but the left arm dangled loosely and was thin compared with the right arm. Poliomyelitis had occurred four years before. There was marked deformity, crepitus and abnormal mobility at the middle part of the upper arm. The roentgen examination disclosed a complete fracture and the usual atrophic changes found in poliomyelitis. The arm was placed in a splint, and healing took place. Two months later another fracture occurred at the same site following a minor trauma. There was some backward displacement but no crepitus. Fractures occurred repeatedly thereafter, and a roentgen examination was made eight months later, revealing good union morphologically. Five years later the union was still effective, the child robust and the arm useless.

CASE 2.—A boy, aged 10 years, was admitted to the Cook County Hospital with a fracture of the right femur following an automobile accident six weeks previously. Six years before the child had had an attack of poliomyelitis affecting the right lower extremity. According to the history a cast had been applied to the right leg and abdomen and traction had been exercised by means of adhesive strips extending half way up the leg, but when the cast was removed at six weeks there was no union. Examination revealed atrophy of the right lower extremity from poliomyelitis. Roentgen examination

Fig. 4 (case 2, Feb. 5, 1926).—The fracture shows a satisfactory alinement. Note the sliver-like transplant adjacent to the outer surface of the shaft.

confirmed the presence of an ununited fracture at the junction of the upper and middle thirds of the right femur, with outward rotation and posterior displacement of the upper fragment. Some callus was noted. Buck's extension was applied, and one month later there appeared to be firm union. Roentgen examination at this time showed considerable callus, but union was questionable. The patient could not extend the knee, but he stated that he had been unable to extend the leg before the injury because of his disease. Two months after his

7. Allison, Nathaniel; and Brooks, Barney: Bone Atrophy, Arch. Surg. **5**: 499 (Nov.) 1922.
8. Barbé, A.: Rev. neurol. **35**: 201 (March) 1919.
9. Rohde, C.: München. med. Wchnschr. **72**: 1874 (Oct. 30) 1925.

admission and three and one-half months after the injury, an inlay was made to strengthen the point of fracture. There was a marked osteoporosis and a relatively weak callus. A graft from the normal left femur was placed into the right. A fragment of the affected right femur subjected to histologic examination did not reveal any unusual changes except atrophy. Two weeks later the bone graft appeared to be attached by the callus.

COMMENT

The bone changes in these cases are the result of two forces. First, there is the atrophy accompanying poliomyelitis, whether trophic or because of nonuse. Second, there is the growth process. According to Allison and Brooks, the result of constant lack of function during the growth period is a relatively smaller and shorter bone.

Fig. 5 (case 2, Feb. 16, 1926).—Fracture shows satisfactory alinement and complete dorsal position of the lower fragment. There is a satisfactory but not abundant callus. The tibial transplant is noted external to the fracture site.

The regenerative power of the bone is not affected by nerve lesions. In these cases callus formation was present, indicating that regeneration does occur, and confirming the observations of Allison and Brooks on this subject and of Putzu,[10] who found experimentally that nerve trunk lesions have no effect on the formation of callus. There are complicating factors in these cases which must be considered, particularly illustrated in the first case; namely, absence of function and impaired nutrition due to the original disease. In the first patient the affected extremity dangled uselessly. In the second patient, some functional stimulation was present from the activity of the gluteal muscles. The importance of function is well known clinically and finds application in the modern treatment of fractures. Wehner[11] confirmed experimentally the assumption that functional stimulus is the best means to promote the production of a callus. This process can be traced in a series of roentgenograms. The callus of functional encouragement is not merely a cement but in shape and structure is adapted to the use for which it is intended. Although calluses in the cases reported here were developed repeatedly, they did not develop the strength necessary to withstand even slight trauma because there was no functional stimulus.

SUMMARY

1. Bone atrophy in poliomyelitis is indistinguishable from bone atrophy from nonuse.

2. Atrophic bones are easily fractured.

3. Callus formation occurs in the fractures of parts affected by poliomyelitis.

4. Callus in such parts produces weak union because the functional stimulus is absent.

310 South Michigan Avenue—30 North Michigan Avenue.

10. Putzu, F.: Chir. d. org. di movimento **5**: 393 (Aug.) 1921; abstr. J. A. M. A. **77**: 1374 (Oct. 22) 1921.

11. Wehner, E.: Beitr. z. klin. Chir. **123**: 541, 1921.

FETAL CEPHALOMETRY IN UTERO

A METHOD FOR ESTIMATING THE OCCIPITOFRONTAL DIAMETER, AND A STATISTICAL STUDY OF CEPHALIC MEASUREMENTS IN ONE HUNDRED AND FORTY-NINE UNMOLDED HEADS *

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The importance of fetal cephalometry in utero becomes obvious when one considers the problems of suspected or real disproportion between the fetal head and the mother's pelvis. Although it is possible by means of roentgen and other methods of pelvimetry to perform satisfactory mensuration of the maternal pelvis, it is universally conceded that at the present time a knowledge of the correct estimation of certain important diameters of the fetal head in utero is not available.

In the present article a method is described which has proved satisfactory in my hands for measuring the occipitofrontal diameter in utero and a report is made of a statistical study of unmolded heads of new-born infants, in order to establish the relationship of the occipitofrontal diameter to other important cephalic measurements.

The accompanying data are taken from the records of 149 infants delivered in the obstetric service of the Woman's Clinic of the Yale University School of Medicine. The data represent a combined study of seventy-six infants born by breech presentation and seventy-three infants born by elective cesarean section. In the breech series, all cases represent infants born alive after easy extraction. The presentation was persistently by the breech in this series, except in those cases of second twin in which extraction was made by the breech. In the cesarean section series, all cases represent living infants from elective operations in cases in which the fetal head had not been exposed to the molding influence of labor.

After a preliminary study of the data, in which the records were considered in relation to the present study,

* From the Yale University School of Medicine and the obstetric service of the Woman's Clinic.

it was decided to combine the two series and to make no sex differentiation. With regard to the accuracy of the measurements, it may be stated that all infants were measured the day of birth, and in most cases this was done immediately following that event. As to the accuracy of the observers, I may say in regard to the occipitofrontal circumference and diameter and the biparietal diameter that the mechanical error of determination is probably quite small, as in these measurements the end-points are definite bony landmarks.

The importance of measuring unmolded heads has been emphasized especially by Scammon and Calkins,[1] who published their results in thirty-three infants thus studied. Their average figures showed a distinct departure from measurements made some time after birth, and they comment: "We think, however, that they approach more nearly the actual measurements of the full-term fetus in utero, since the cases upon which they have been based have not been subjected to molding, nor have they been increased by growth in the period between birth and the fourth day, when many of the published figures have been taken."

The accompanying tables represent the measurements of infants presenting unmolded heads at birth.

TABLE 1.—*Relationship of Occipitofrontal Diameter to Biparietal Diameter in One Hundred Forty-Seven Infants*

Occipitofrontal Diameter, Cm.	Number of Cases	Biparietal Diameter		
		Average, Cm.	Maximum, Cm.	Minimum, Cm.
13.00	2	10.00	10.50	9.50
12.75	1	10.25	10.25	10.25
12.50	14	9.90	11.00	9.00
12.25	3	9.60	10.00	9.00
12.00	33	9.50	10.25	9.25
11.75	3	9.40	9.50	8.00
11.50	28	9.40	10.00	8.50
11.25	4	9.20	9.75	8.00
11.00	27	9.20	10.50	8.50
10.50	7	8.90	9.50	8.00
10.25	5	8.90	10.00	8.00
10.00	11	8.40	9.00	7.00
9.00	4	7.40	8.00	5.50
8.75	1	5.50	5.50	6.50
8.50	1	6.50	6.50	6.50
8.00	2	6.70	7.00	6.30
7.50	1	6.30	6.30	.....
	147			

In table 1, it will be seen that in 117 instances, or 79.6 per cent, the occipitofrontal diameter falls between 10.5 and 12.5 cm., with an accompanying biparietal diameter of from 9 to 10 cm. From the study of this table, it would appear that at least for unmolded heads in utero some modification of the sliding scale suggested by McDonald[2] is necessary for a working rule in estimating the biparietal diameter. The following suggests itself:

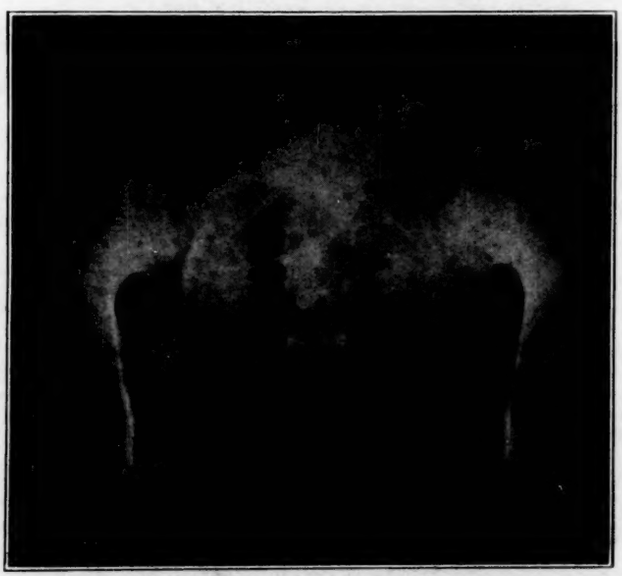
Given a measured occipitofrontal diameter of 12.5, substract 2.5 for biparietal.
Given a measured occipitofrontal diameter of 12.0, subtract 2.5 for biparietal.
Given a measured occipitofrontal diameter of 11.5, subtract 2.0 for biparietal.
Given a measured occipitofrontal diameter of 11.0, subtract 1.75 for biparietal.
Given a measured occipitofrontal diameter of 10.5, subtract 1.5 for biparietal.
Given a measured occipitofrontal diameter of 10.0, subtract 1.5 for biparietal.
Given a measured occipitofrontal diameter of 9.0, subtract 1.5 for biparietal.

1. Scammon, R. E., and Calkins, L. A.: The Development and Growth of the External Dimensions of the Human Body in the Fetal Period, Minneapolis, 1929.
2. McDonald, Ellice: Mensuration of the Child in the Uterus with New Methods, J. A. M. A. 47: 1979-1983 (Dec. 15) 1906.

The suboccipitobregmatic circumference (table 2) follows a definite ratio between itself and the occipitofrontal diameter. It should be borne in mind that the measuring of this circumference in the living infant is probably subject to greater mechanical error of determination than the occipitofrontal circumference, because of the absence of definite bony landmarks from which the computation is made.

TABLE 2.—*Relationship of Occipitofrontal Diameter to Suboccipitobregmatic Circumference*

Occipitofrontal Diameter, Cm.	Number of Cases	Suboccipitobregmatic Circumference		
		Average, Cm.	Maximum, Cm.	Minimum, Cm.
13.00	2	35.75	37.00	34.50
12.75	1	33.50	33.50	33.50
12.50	14	33.70	36.00	31.50
12.25	3	32.60	33.00	32.50
12.00	33	32.40	36.00	27.00
11.75	4	31.40	32.50	30.00
11.50	28	31.90	34.00	29.75
11.25	5	30.40	31.50	29.00
11.00	28	31.40	34.50	27.50
10.50	6	30.40	31.25	26.50
10.25	4	28.90	31.50	28.00
10.00	11	28.50	32.00	27.50
9.00	4	26.00	27.00	25.50
8.75	1	23.00	23.00	23.00
8.50	1	24.50	24.50	24.50
8.00	2	22.00	23.00	21.00
7.50	1	22.00	22.00	22.00
	148			



Roentgenogram of the fetal head in utero. The spaces between the dots represent square centimeters in the plane of the occiptofrontal diameter. Not only is measurement of this diameter possible but an outline of the cranium may be made in its true proportion.

A definite ratio is maintained between the occipitofrontal diameter and the circumference (table 3). It should be possible to construct some such working rule as that formulated on the basis of table 1. Table 3 demonstrates that in general the circumference is three times the diameter. This appears to be a safe working rule for obstetric purposes.

It has been fairly definitely established that the best index to fetal age is that of fetal length or crown heel distance (table 4). Reed[3] points out that babies put on weight in the uterus as easily and as variably as after birth. Heaviness is a sign of present nutrition, while length is an indication of past assimilation. Bal-

3. Reed, C. B.: A Study of Fetal Maturity in Utero, Surg. Gynec. Obst. 25: 201 (Aug.) 1917.

lantyne [4] observes that "weight may not therefore be safely used as a solitary criterion of the length of antenatal life; at the same time the common sense of the matter must not be neglected. Presence of excessive weight is not proof of postmaturity, for it may be due to other things; but its absence is prima facie evidence against the occurrence of prolonged pregnancy." Bossi [5] regards the weight of the fetus as of no importance in the diagnosis of postmaturity but places great reliance on the length in association with the development of the bones and the hardness of the skull.

TABLE 3.—*Relationship of Occipitofrontal Diameter to Occipitofrontal Circumference*

Occipitofrontal Diameter, Cm.	Number of Cases	Occipitofrontal Circumference		
		Average, Cm.	Maximum, Cm.	Minimum, Cm.
13.00	2	37.50	39.00	36.00
12.75	1	35.50	35.50	35.50
12.50	14	35.60	37.00	34.50
12.25	3	34.60	35.50	34.00
12.00	33	34.90	37.00	29.00
11.75	4	34.90	35.00	33.50
11.50	26	34.40	36.50	32.00
11.25	5	32.90	33.50	32.00
11.00	28	31.80	33.50	29.50
10.50	8	32.50	34.00	32.00
10.25	4	31.80	34.00	29.75
10.00	11	31.00	34.50	29.00
9.00	4	27.20	29.00	26.00
8.75	1	24.75	24.75	24.75
8.50	1	24.50	24.50	24.50
8.00	2	23.70	24.00	23.50
7.50	1	22.00	22.00	22.00
	148			

At the present time it is probable that the best procedure for obtaining the fetal length in utero is the Ahlfeld [6] method or the modification I described [7] in 1918. The latter procedure is particularly useful in those cases in which the fetal head lies low in the pelvis.

TABLE 4.—*Relation of Fetal Length to Occipitofrontal Diameter*

Length, Cm.	Number of Cases Cases	Occipitofrontal Diameter		
		Average Cm.	Maximum Cm.	Minimum Cm.
58.00	1	12 25	12.25	12.25
57.50	1	11.50	11.50	11.50
56.00	1	12.00	12.00	12.00
55.00	1	12.50	12.50	12.50
54.50	3	11.70	12.00	11.50
54.00	3	11.80	12.50	11.50
53.50	4	11.90	12.50	10.50
53.00	8	12.00	13.00	11.50
52.50	3	11.80	12.00	11.50
52.00	8	12.00	13.00	11.00
51.50	4	11.60	12.00	11.00
51.00	16	11.50	12.75	10.00
50.50	2	11.50	11.50	11.50
50.00	18	11.80	12.50	10.50
49.50	3	12.20	12.50	11.50
49.00	16	11.20	12.00	10.50
48 50	7	10.70	11.50	10.00
48.00	8	11.30	12.00	10.25
47.50	2	11.10	11.25	11.00
47.00	6	11.10	12.00	10.25
46.00	5	11.40	11.75	11.00
45.00	2	10.60	11.00	10.25
43.50	1	10.00	10.00	10.00
43.00	2	10.00	10.00	10.00
42.50	1	10.50	10.50	10.50
42.00	3	10.30	11.00	10.00
41.00	4	9.20	10.00	8.00
40.00	1	9.00	9.00	9.00
39.50	1	9.00	9.00	9.00
37.00	1	7.50	7.50	7.50
36.00	1	8.00	8.00	8.00
35.00	1	8.50	8.50	8.50
34.50	1	8.00	8.00	8.00
33.50	1	7.50	7.50	7.50

There are nevertheless certain conditions in which fetal length is difficult to estimate, as in individuals with thick abdominal walls and in certain cases of hydramnios. In such instances it is apparent from table 4 that the estimate of the occipitofrontal diameter in utero not only is of immense importance when the pelvis is contracted but also is a valuable aid in establishing the age of the fetus. From the data presented, it would appear that an intra-uterine occipitofrontal diameter of 11.5 or more would represent a safely mature child, while a child with a diameter of 11.0 cm. would be but slightly, if at all, premature. Infants with diameters under 10.5 cm. would appear to be unquestionably premature.

METHOD OF ESTIMATING OCCIPITOFRONTAL DIAMETER IN UTERO

My present procedure for estimating the occipitofrontal diameter in utero is essentially an adaptation of the method of roentgen pelvimetry [8] which has been developed in this clinic. The plane to be measured must be identified and the distance above the sensitive plate measured. This is performed by means of abdominal palpation and a pair of dividers. In this connection it will be recalled that the two portions of the fetal body most easily identified at the end of pregnancy in the great majority of instances are the fetal forehead and the occiput. This is essentially true except in those cases in which at the end of pregnancy the head has already descended to a very low position in the pelvis. In this instance the method is not as applicable, but it should be borne in mind that in such cases there is usually no question of disproportion and hence no pressing need for information concerning fetal head diameters. In most cases in which the fetal head is riding above or at the brim, mensuration of the occipitofrontal diameter is possible and can be accurately performed.

After the plane through which the occipitofrontal diameter passes has been established and the number of centimeters above the sensitive plate measured with the patient in the horizontal position, the exposure is made with the tube at a distance of 36 inches, centering directly over the midpoint of the diameter. With the tube and exposed plate still in position, the patient is removed from the table and the perforated lead plate is introduced in the same plane as that occupied by the occipitofrontal diameter. This plate is a 17 by 20 inch sheet of lead, 1 mm. in thickness, mounted on a board and perforated with tiny holes just 1 cm. apart. A flash exposure is made on the previously exposed plate, and on development will be seen the image of the fetal head shadow and a series of black dots, farther apart than 1 cm., it is true, but representing the centimeter scale in the plane of the occipitofrontal diameter. This corrects for at least a working basis the divergence of the rays in their passage from the target to the plate. In viewing the developed plate, as shown in the accompanying illustration, it is obvious that not only may the occipitofrontal diameter be readily measured but an outline of the cranium may be easily drawn to scale. This should be of importance in studying the effect of labor on the molding process of the infant head. Such studies are now being made in this clinic.

Questions will naturally arise with regard to certain points in the procedure outlined. The first will concern the determination of the plane in which the occipitofrontal diameter lies. After a little acquaintance with the method, it will be found that a considerable latitude in certain points is allowable. For instance, the estab-

4. Ballantyne, J. W., and Browne, P. J.: The Problems of Fetal Postmaturity and Prolongation of Pregnancy, J. Obst. & Gynec. Brit. Emp. **29**: 177, 1922.

5. Bossi, quoted by Ballantyne and Brown (footnote 4).

6. Ahlfeld: Bestimmungen der Grosse und des Alters der Frucht von der Geburt, Arch. f. Gynäk. **2**, 1872.

7. Thoms, Herbert: A Modification of the Ahlfeld Method for Determining the Maturity of the Fetus in Utero, Surg. Gynec. Obst. **26**: 563-565 (May) 1918.

8. Thoms, Herbert: A New Method of Roentgen Pelvimetry, J. A. M. A. **92**: 1515-1516 (May 4) 1929.

lishment of this plane within a range of from 1 to 3 cm. above the plate affects the end-result so slightly as to be negligible for working purposes. The question also arises as to the dipping of the vertex either anterior or posterior to the transverse diameter of the superior strait. This also affects the end-result, but minimally, provided the head is not firmly fixed low in the pelvis.

In checking my results in infants measured in utero before, and extra utero immediately after, cesarean section, I have found that 2 mm. should be added to the intra-uterine measurements. This figure represents the thickness of the scalp over the frontal and occipital bones. The shadow of this integument is not seen, of course, in the roentgenogram.

SUMMARY

1. The average figures of the usual cephalic measurements of unmolded new-born infant heads show a departure from the measurements of molded heads.

2. A comparison of the average figures for the various head diameters and circumferences shows a distinct ratio between the occipitofrontal diameter and the other diameters and circumferences.

3. A knowledge of the occipitofrontal diameter in utero enables one to compute the biparietal diameter and the occipitofrontal circumference with sufficient accuracy for obstetric purposes.

4. A knowledge of the occipitofrontal diameter in utero is of value in establishing the age of the fetus in utero.

5. The method of roentgen fetometry here described makes it possible to measure the occipitofrontal diameter in utero.

6. By means of the procedure here described, a profile of the cranium in utero is possible in its true proportions.

THE LEGEND OF THE PREVENTION OF MENTAL DISEASE *

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The belief has become all too prevalent that a loud voice gives importance to ideas, that error sufficiently often repeated ultimately becomes truth, and that folly spread over wide regions somehow turns into wisdom. Such is the nature of propaganda. On more sober consideration, it becomes evident that the trumpet has no inherent virtues, that the radio imparts no fundamental attributes to ideas, that the printed word is endowed with no special magic, and that neither reiteration nor dissemination is capable of giving substance to a thought which is devoid of it. Nevertheless, the popular mirage exists, and there is sufficient reason to suspect that science too, at least popular medical science, has been fascinated and has succumbed.

Lest the title of this paper convey a wrong impression, let me make the trite observation that every physician, myself included, is firmly convinced that the future of medicine lies in scientific prevention. But the loud fanfare about prevention has created the curious opinion that we are dealing with a modern concept or a modern discovery. As a matter of fact, even the savage evolved what for him were definite methods of prevention. That he made use of prayer, tabus, sacrifice, incantation and various sorceries does not alter the fact that by means of white magic he sought to prevent disease and actually believed that he did. And in the field of mental disease he may even have attained some measure of success, the old wizard comparing not unfavorably with the modern cultist and quack, while the efficacy of the more ancient measures was neither greater nor less than many so confidently heralded in our own day.

But the fundamental difference in the methods of prevention employed previously and some of the modern methods lies in the scientific recognition of causes. It is by this standard—the knowledge of specific causes, of the mode of transmission and of the manner of evolution of disease—that we must test our ability to prevent, and it is by these criteria that I would test the claim so glibly and so confidently made as to the prevention of nervous and mental disease.

Before proceeding, it may not be irrelevant to stress another fact; namely, that treatment, cure and prevention are entirely different matters. There are diseases which we know how to prevent but not to cure; there are others which can be cured but not prevented; there are a few which can be prevented as well as cured; there are many which can neither be prevented nor cured; and, finally, there is that large group which can be treated but not cured.

Sad as it is to make the confession, the fact remains that, despite accumulation of knowledge, the ultimate cause or causes of nervous and mental diseases is unknown. There are a great many theories but few facts. Their very profusion not only is in inverse ratio to our knowledge but is an actual confession of ignorance or merely a verbal cloak for it. Nor do we know much about the rôle of heredity in the causation of illness and mental diseases, although admittedly it is a potent factor despite the loud claim of some that the superstition ought to be uprooted. Nevertheless we see medical men issue in print or proclaim from the rostrum statements which cannot for a moment withstand the test of scientific investigation; we hear men state with assurance that they can prevent social and individual ills whose ultimate cause is utterly unknown, arousing false interest and vain hopes and enthroning themselves as popular idols in the guise of honest servants of accurate science.

Enthusiastic mental hygiene tells us (and I am quoting from actual statements) that it is concerned with the prevention of mental deficiency, criminality, the psychoneuroses, the psychoses, antisocial traits, family unhappiness, divorce, prostitution, alcoholism, sexual perversion, epilepsy and other such simple matters. All one can do is to gape and wonder or, perhaps, ask a few questions. How much do we actually know of the causes of mental deficiency? Or to take the question of criminality, it admittedly depends on ill defined but undoubted hereditary factors, on mental deficiency, on diverse psychic and emotional states, on complex familial situations, on educational standards, on the social structure, on moral or ethical principles, on intricate matters of law and statutes, on politics, on concepts of justice, on religious views, and on a host of interrelated problems that will require generations to study, let alone to solve.

Despite these elementary truths, endocrinologists do not hesitate to state that mental deficiency and criminality can be prevented by the simple process of juggling a few extracts of the glands of internal secretion. I doubt whether it is an exaggeration to say that endocrinology is but a medical fledgling which has

* Abridged from a paper read at a joint meeting of the New York Neurological Society and the Section of Neurology and Psychiatry of the New York Academy of Medicine, Jan. 14, 1930.

hardly emerged from the womb of experimental medicine and that it can be applied clinically with any degree of accuracy or success in but a few limited conditions. Such is the uncertain, if not confused, domain of clinical endocrinology that one begins to suspect a recrudescence of alchemy. And yet the claim is made that "glands" will cure and prevent and perform miracles. No less modest are the claims of some mental hygienists.

Without indulging in destructive criticism, one may ask, in all sincerity, What great advance has been made in psychiatry in the past twenty-five years, what new scientific discoveries have been made to warrant the sweeping generalizations and confident promises that mental diseases can be prevented? What do we know of the ultimate cause of dementia praecox? What do we know of the causes of organic psychoses that justifies boastfulness? What specific disease of the nervous system can we actually prevent? And have the psychoses diminished actually or relatively in recent years?

One enthusiastic exponent utters a repetitious formula, derived from a purely hypothetical notion, spun out of phantasy, without relation to clinical experience or laboratory facts, and explains, cures, prevents and promises all sorts of panaceas with—words. All is so very simple: inferiority accounts for neuroses, psychoses, perversions, criminality, greed, love, ambition, cowardice, bravery, poverty, alcoholism, marital infelicity, divorce, general morality, economic distress, wars, panics, revolutions, religion, history and philosophy; in short, every conceivable social and individual phenomenon. A notion which does violence to all accumulated knowledge, which, if granted the dignity of critical analysis, is found to postulate the novel and evolution-defying concept that out of a biologic defect comes a biologic purpose, has been popularly accepted because it is easy, so simple that it requires no effort of thought for comprehension. It is positively axiomatic and rests on the irrefutable evidence of—I say so.

It is no discredit to psychiatry to acknowledge that it has barely emerged from the descriptive stage; that its practice is still considerably more of an art than a science; that it is perhaps less rooted in anatomy, physiology, pathology and all the laboratory sciences than most other branches of medicine. But instead of due regard for fact there is almost a groveling worship of formulas, an infatuation with fetishes of words. New shibboleths are coined and the illusion is created that new facts have been discovered.

One must also confess that what passes for social psychiatry is barely out of the religious or supernatural stage and quite deeply immersed in the speculative or metaphysical. Sociology has not yet discarded medieval concepts, and scholasticism is not quite dead; nor is human thought altogether freed from the baneful influence which magic, religion and metaphysics have exerted on the development of the positive sciences. We still speak of ultimate purposes and vital ends and call them by the high sounding name of teleology without recognizing that it is a religious and not a scientific concept.

It is not my object to speak against the legitimate and well established efforts of prevention. (I am purposely leaving out the important question of eugenics and its relation to mental deficiency and mental disease.) I would not decry the honest but few achievements of mental hygiene in the study of mental problems, in the invaluable surveys of institutions for the insane and of prisons, in the establishment of child guidance and court clinics, in the humanizing efforts in the treatment of patients with mental diseases, in the focusing of attention on modern aspects of social psychiatry, in the impetus it has given to the study of mental diseases inside and out of medical schools. Nor would I overlook the fact that not only has the study of child psychology, based on sound psychoanalytic principles, resulted in valuable insight and moderate contributions; but the dissemination of knowledge among physicians, parents and educators holds out considerable promise for the ultimate understanding of many of the problems of the neuroses.

Without, therefore, impugning legitimate efforts and valuable results, I would still call attention to the sensational claims made in behalf of a budding science, and venture the opinion that much of the mental hygiene stock foisted on the lay as well as the medical public has been watered beyond reason and that it stands in urgent need of deflation. I do not know of any other branch of science, not even excepting philosophy, which relies so much on words, so much on arm-chair thinking, and so little on accurate knowledge. I do not know in what other fields speakers and writers say so much about so little, talk for hours on subjects which can be explained in minutes, issue volumes on what can be said in paragraphs, and succeed in giving the momentary impression that they have said something when in reality they have said nothing at all. I am not aware of any other branch of learning in which future and painfully slow progress has been discounted in advance to such a degree and in such a great hurry.

We have before us a shameful spectacle in the cancer prevention propaganda. It is admitted, without exception, that we have absolutely no knowledge of the real cause of cancer and that we grope blindly in all our methods of treatment. We employ the knife and radium and x-rays because we obtain some temporary and a few permanent results and because we know no better; and we are quite ignorant of the reason why, of two persons having apparently similar types of cancer in exactly or approximately the same parts of the body, one profits from treatment and the other does not. But of true prevention or even control we know nothing. Still that does not deter propagandists, and, to our shame be it said, also medical propagandists, from literally frightening people, even school children, out of their wits and making vain promises and arousing false hopes which are so often followed by tragic awakening. Again I venture the opinion that, whatever the motive, science is not served thereby. But to revert to my own topic, one shudders to contemplate that, since we already have fire prevention week and cancer week, we may soon read of criminal week, dementia praecox week, imbecile week, and what-not other week.

I realize that much of what I have said, and perhaps the way in which it is said, will arouse stout resistance no less than vehement criticism. For the crude way of expressing my thoughts I ask indulgence; for unintentional offense I wish to apologize. If I have erred, I am open to conviction; if convinced, I am willing to retract. My remarks have been animated solely by a desire to serve what I conceive to be scientific truth. It is my opinion that progress is hindered rather than advanced by exaggerated claims, spectacular methods, and sham research. Knowing how abysmal ignorance is, I feel that one should be extremely modest before knowledge. One can pursue truth to greater advantage

in silent retreats than in the noisy market place. Useful discoveries can be well disseminated without the aid of trumpets. The honest scientist does not announce his investigations before verifying his results. To be a true scientist one must possess absolute intellectual integrity. The great scholar not only is modest in his statements and constantly beset by doubts but can well afford the luxury of saying, "I do not know." Only the fool or the ignoramus deludes himself into thinking that he has taken out a patent on wisdom and a copyright on knowledge. All of us still are children before the great unknown, and it ill befits us to play the rôle of high priests. The day of omniscience, whether human or divine, is gone forever. To insure progress we must honestly and courageously seek to avoid the dangerous paths of folly as well as the lurking pitfalls of error.

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ERYSIPELOID

REPORT OF CASE OF INFECTION ACQUIRED FROM FISH OF GREAT LAKES *

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Erysipeloid is an acute inflammatory disease, starting in the skin, at times extending more deeply, producing cellulitis or lymphangitis and lymphadenopathy, sometimes accompanied by general symptoms. It is due to an organism supposedly identical with that causing swine erysipelas (*Erysipelothrix suis*). The incubation period is two days, and the duration of the infection is from one to eight weeks. The disease was reported from Europe as occurring after inoculation into a wound of decomposed animal matter, fish or cheese. Reports in this country have been confined to the Atlantic seaboard (Gilchrist,[1] Klauder[2]), with the exception of Wile's[3] report of a similar condition in fishermen of the Great Lakes. We have had the opportunity to study an unrecognized case of erysipeloid, and are reporting it to call attention to its presence about the Great Lakes and to record good results from the use of specific serum.

REPORT OF CASE

A woman, aged 28, seen Nov. 23, 1929, complained of a painful eruption on the index and middle fingers of the right hand which had started five weeks previously as a fish-bone injury to the tip of the index finger. She had purchased some fresh lake perch, already cleaned and scaled. She recleaned the fish and injured her finger on a bone or spine. (Inquiry at the fish market revealed that this market procures its fish from the Great Lakes. It does not handle sea food and had never obtained fish from the Atlantic seaboard.) Two days later she noted pain and tenderness and a sensation of burning at the site of injury. A physician advised the application of heat. Five days later he incised the lesion but did not obtain purulent material. Three days later the lesion had extended to the second interphalangeal joint, and the finger was erythematous, painful and hot. The lesion extended in a spiral course around the finger toward the palm. A second physician painted the lesion with sulphonated bitumen, applied an ointment containing sulphur, and gave the patient a hypodermic injection in the thigh. The process extended to involve a small area of the palm at the base of the index and middle fingers, and spread along the interdigital web up the middle finger. These two fingers felt numb, especially at night.

The patient's past history was unimportant. On physical examination she appeared well nourished and of large stature. The thyroid was slightly enlarged. No enlarged lymph nodes could be felt. The blood pressure and the Kolmer Wassermann and Kahn precipitation reactions of the blood were normal.

On the index and middle fingers of the right hand from the palm to the proximal interphalangeal joint were large dull red areas with irregular slightly elevated borders. The areas previously involved appeared normal. On the palm, extending about 2.5 cm. from the base of the index and middle fingers, was an erythematous plaque, with no desquamation. The middle finger was swollen and tender, and just proximal to the first interphalangeal joint was an elevated, dusky red border

The patient was seen one week later, at which time the process had extended over the first interphalangeal joint of the middle finger. Twenty-five cubic centimeters of *Erysipelothrix suis* serum (Mulford) was administered intragluteally. A few hours after she had received the serum, she was nauseated and had diarrhea. Two days later the lesion had extended slightly, although the finger was not so painful. Five days after the administration of the serum an urticarial lesion developed at the site of injection, and the entire body surface was soon involved in urticaria. This was accompanied by weakness, confining the patient to bed, and stiffness and pain in the joints. All symptoms slowly disappeared. Five days after she had received the serum, the fingers became normal and have remained so.

COMMENT

Before the serum was given, 0.2 cc. of sterile saline solution was injected into the advancing border of the lesion. Material was aspirated, amounting to about 0.05 cc., and injected intraperitoneally into a white mouse. At the end of three weeks the mouse was still alive and apparently normal. It was killed and some of the heart blood was placed in brain hormone broth. The medium remained sterile.

Attempts by others (Gilchrist,[1] Bierbaum and Gottron,[4] Klauder[2]) to cultivate the organism by methods similar to ours were unsuccessful. It is necessary to implant deeply excised tissue in the medium to obtain cultures. This was not considered practicable in our case. Specific serum has been used by Pick[5] and Klauder[2] with good results. Pick treated some patients with normal horse serum, with no effect on the lesions. He concluded from this that healing is not due to a nonspecific effect. He was able to treat successfully cases of swine erysipelas and erysipeloid by means of specific serum, which he concluded is evidence of the identity of the two diseases.

SUMMARY

A case of erysipeloid occurred following an injury from handling fresh fish from the Great Lakes. The incubation period of two days and the course of the disease were typical. Attempts to cultivate the organism failed. The lesion healed in five days after the use of specific serum.

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1. Gilchrist, T. C.: Erysipeloid, with a Record of 329 Cases, of Which 323 Were Caused by Crab Bites or Lesions Produced by Crabs, J. Cutan. Dis. **22**: 507, 1904.

2. Klauder, J. V.; Righter, L. W., and Harkins, M. J.: A Distinctive and Severe Form of Erysipeloid Among Fish Handlers, Arch. Dermat. & Syph. **14**: 662 (Dec.) 1926. Klauder, J. V.: Erysipeloid and Swine Erysipelas in Man, J. A. M. A. **86**: 536 (Feb. 20) 1926.

3. Wile, U. J., in discussion on Klauder, Righter and Harkins (footnote 2), p. 681.

4. Bierbaum, K., and Gottron, E.: Zur Kenntniss der Erysipeloids Rosenbach unter besonderer Berücksichtigung seiner Beziehungen zum Schweinrotlauf, Derm. Ztschr. **57**: 5, 1929.

5. Pick, Erwin: Zur Aetiologie und Therapie des Erysipeloids, Dermat. Wchnschr. **79**: 1627 (Dec. 20) 1924.

INEFFICIENCY OF METAPHEN AS A SKIN DISINFECTANT*

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At least as early as 1908[1] the importance of eliminating the transfer of bacteriostatic amounts of drug to subcultures in making bactericidal tests of chemicals was emphasized. In spite of this obvious and easily controlled source of error, one repeatedly finds in the literature reports of bactericidal action which on analysis turn out to be nothing more than demonstrations of antiseptic or inhibitory action. By the addition of drug inhibition controls, it may be proved that in many such experiments sufficient chemical has been transferred to inhibit the growth of any living organisms that may have been carried over from the original test to the subculture.

Another example of this error has recently appeared in the JOURNAL.[2] Raiziss, Severac and Moetsch have reported that with solutions of metaphen, ranging in strength from 1:500 to 1:2,500, they obtained complete skin sterilization in every instance. The "100 per cent" sterilizations were computed from three tests each with the 1:500 and 1:1,000 dilutions of drug, from two tests with the 1:2,000 dilution and from ten tests with the 1:2,500 dilution. No drug inhibition controls were reported.

Their technic was briefly as follows: Shaved and cleaned rabbit skin was inoculated with heavy mixed cultures of *Staphylococcus aureus, Streptococcus hemolyticus* and *B. subtilis*. The inoculated area, a culture control from which was positive, was covered with sterile gauze saturated with the solution to be tested. After five minutes the gauze was removed and at various intervals cultures were made by rubbing the test area with a moist sterile swab and dropping the swab into *"a test tube containing bouillon."* The volume of bouillon was not stated.

In view of the high dilutions at which metaphen is said to have inhibitory action (Raiziss, Severac and Moetsch in their article state that it may inhibit the growth of *Staphylococcus aureus* in a dilution of 1:20,400,000), it seemed to us possible that the amounts of drug transferred to the "tube containing bouillon" might not have been diluted beyond an inhibitory concentration. We therefore made the following drug inhibition controls: Pieces of gauze saturated with 1:500 or 1:2,500 metaphen were applied to the undersurface of the forearm and allowed to remain in place for five minutes. The gauze was then removed and by means of moist sterile swabs the centers of the treated areas were rubbed and the swabs dropped into test tubes containing bouillon. Ten cubic centimeters of the medium was used in our tests. The center areas rubbed covered not more than 1 square centimeter. Tests in this way were made from (*a*) skin on which the drug had dried; (*b*) skin on which the drug had dried, with subsequent washing with a few cubic centimeters of sterile water, and (*c*) skin still moist with the drug. In the series with metaphen 1:500, similar tests were made with transfers to flasks containing 900 cc. of sterile broth, instead of to test tubes containing 10 cc. These subcultures, both tubes and flasks, were then inoculated each with one 4 mm. loopful of a twenty-four hour broth culture of *Staphylococcus aureus*. Although the flasks showed a heavy growth of *Staphylococcus aureus*, as compared with a culture control, in no case did any of the ten transfers to 10 cc. of bouillon in the 1:500 series show any growth. In this series subcultures were made from skin still moist with the drug in two cases, from skin on which the drug had been allowed to dry in six cases, and from skin washed after the drug had dried in two cases. In the parallel series in which 1:2,500 metaphen was used and allowed to dry on the skin before transfers were made to 10 cc. of bouillon, seven of the tubes showed no growth of the inoculated organisms, *Staphylococcus aureus*, and three tubes showed a growth which was very scant in comparison with the control. It is therefore conclusively shown that the tests of Raiziss and his co-workers with dilutions of from 1:500 to 1:2,500 of metaphen were invalid as bactericidal tests, because enough drug had been carried over to inhibit the growth of bacteria in every case.

The Sterilization of Normal Human Skin with 1:500 Metaphen.

Type Test	Total Number of Tests	Sterilized	Failed
Skin wet with drug, not washed	1	0	1
Skin wet with drug, washed	7	2	5
Skin dried after drug, not washed	3	0	3
Skin dried after drug, washed	3	3	0
	14	5	9

Having shown the invalidity of these metaphen tests, it became of interest to determine what value metaphen might have as a skin sterilizing agent when tested by a controlled method. Areas of normal human skin of about 3 square inches and without any artificial contamination with bacterial cultures were covered with gauze saturated with 1:500 metaphen. After five minutes' contact, the gauze was removed and an area of about 1 square inch in the center of each treated area was rubbed vigorously with a moist sterile swab until the skin became erythematous. These swabs were then broken off aseptically and dropped into flasks containing 900 cc. of sterile bouillon, which were incubated for seventy-two hours at 37.5 C. Sterility controls were made of the swabs, of the bouillon used for moistening them and of the bouillon used for cultures. The drug inhibition controls for these tests have already been described. Skin controls from untreated areas were made for each series of tests and were invariably positive. Areas of skin were studied in this way under four conditions: (*a*) cultures made while the skin was still moist with the drug; (*b*) cultures made after the skin, still wet with drug, had been washed with a few cubic centimeters of sterile water; (*c*) cultures made after the drug had dried and without washing the skin, and (*d*) cultures made after the drug had dried and the skin had subsequently been washed with a few cubic centimenters of sterile water. It should be noted that those tests (*b* and *d*) in which washing was employed would be most favorable to the drug, because washing would help to remove any

* From the James Buchanan Brady Urological Institute, Johns Hopkins Hospital.

1. Chick, H.: J. Hyg. 8: 92, 1908.
2. Raiziss, G. W.; Severac, Marie; and Moetsch, J. C.: Metaphen, J. A. M. A. 94: 1199 (April 19) 1930.

remaining bacteria from the surface of the skin. The subjects were six members of the laboratory staff. Two tests were made on the ankle, and all others on the underside of the forearm. It was noted that in two cases in which sterilization was obtained, the skin control showed very light growth, which appeared only after forty-eight hours. In all other cases the skin controls were positive in twenty-four hours.

These observations are summarized in the accompanying table.

It is seen that in fourteen tests the skin was not sterilized in nine. Apparent sterilization was obtained only in those cases in which the skin was washed with water after exposure to the drug, a procedure that may have washed away viable organisms, although its purpose was to wash away adherent drug. We noted a variation in ease of sterilization among different skins. The skin of one of the authors was sterilized in two tests. The skins of two laboratory technicians were not sterilized in either of two tests on each individual.

CONCLUSIONS

1. The recently published experiments of Raiziss, Severac and Moetsch showing that metaphen in strengths of from 1 : 500 to 1 : 2,500 invariably sterilizes inoculated rabbit skin are invalid because the amounts of drug transferred to the subcultures have been shown to be sufficient to inhibit bacterial growth.

2. Metaphen 1 : 500, tested by a valid method, with exposure for five minutes and subsequent drying, cannot, according to our experience, be relied on regularly to sterilize normal human skin. Different individuals show considerable variation in difficulty of sterilization.

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TUBERCULOUS PLEURISY *

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Pleuritic adhesions due to pneumonia have been demonstrated by Ruffer in Egyptian mummies. Two typical examples of Pott's disease have been found on Egyptian monuments, and one marble statuette depicting the same disease was discovered. These date from about 2000 B. C., and belonging to the same period a mummy was discovered which, according to Sudhoff, undoubtedly presented evidence of Pott's disease. Tubercle bacilli, however, have never been identified in Egyptian mummies, so it is not possible to prove that tuberculous pleurisy existed, even though tuberculous bone disease seems proved.

Hippocrates advised hot water bottles, or bladders, and heat, for pain in the side. Empyema was confused with tuberculous lung cavities, as is evidenced by Hippocrates' aphorism 44: "When empyema is treated by cautery or incision, if pure and white pus flow from the wound, the patients recover; but if mixed with blood, slimy and fetid, they die."

Aretaeus, who probably copied from Archigenes, in the first century of the Christian era described pleurisy thus: "An acute pain accompanies it, which reaches to the throat, and in some to the back and shoulders; it is succeeded by a difficulty in breathing, nausea, redness of the cheeks, and a dry cough."

The first dawn of knowledge regarding tuberculous pleurisy came in 1805, when Bichat wrote "Pleurisies produce phthisis."

This observation followed Boerhaave's specific location of pleurisy in the pleura and not in the lung in 1730.

Chapter V of Laënnec's immortal work on auscultation, published in 1819, contains much excellent information, pathologic and clinical, on pleurisy. It is a curious omission, however, that Laënnec failed to describe the pleuritic rub, although Bichat, in 1805, had described the "bruit" which patients themselves heard or felt.

Louis, about 1828, was an eager student of tuberculous pleurisy, and among other facts he noted that, in general, the larger the cavities found in tuberculous lungs, the greater was the area of pleuritic adhesions. Trousseau, in 1843, advocated thoracentesis for pleuritic effusion. Auenbrugger, in his studies on percussion, filled the pleura of a cadaver with fluid.

The assertion that pleurisy was not due to cold or chill was made by See, who in 1886 wrote that tubercle was the etiologic factor, and this had been proved by Chauffard by the inoculation of guinea-pigs with small quantities of pleuritic effusions.

But it is not until 1922 that the statement by Bezancon is found which it is my purpose in this paper to stress: "At adolescence a pleurisy will often have revealed the impregnation of tubercle and it will only be a few years later that the pulmonary localization will manifest itself. In some cases pulmonary disease will light up ten to twenty years later and subjects of pleurisy in youth may not become phthisic until mature or old age."

PATHOLOGY

Tuberculous pleurisy may be acute or chronic. The acute form may be dry—although Laënnec doubted whether pleurisy ever occurred without some effusion—or accompanied by a serofibrinous and, at times, hemorrhagic fluid. Pleurisy with effusion can persist, occasionally, in spite of treatment, for a year or more. The condition is not infrequently bilateral. It is a frequent concomitant of artificial pneumothorax when the onset may be accompanied by a high and lasting fever in some patients.

A dry pleurisy may be chronic and persist for years. As we learn from autopsies, tuberculous pleurisy may result in widespread adhesions when the condition has been almost symptomless.

Tuberculous pleurisy in general arises from a subpleural tubercle deposit, and the inflammatory condition is a result of allergy. Following a pleurisy with effusion the original lung focus may, by roentgen study, seem to have disappeared.

SYMPTOMS

Acute tuberculous pleurisy may arise insidiously in children and adults, without pain and at times without apparent fever.

In the majority of patients, however, there is marked fever and definite pain. Shakespeare, who may have experienced this condition, writes of "sidestitches which shall pen thy breath up." Huxley in 1887 had to forego engagements "by reason of a devil in the shape of muscular rheumatism of one side." Huxley experienced pain "the similitude thereof is a bird of prey periodically digging in his claws and stopping your breath in a playful way." Shelley was a victim

* Read before the annual meeting of the National Tuberculosis Association, Memphis, Tenn., May 8, 1930.

of chronic pleurisy and experienced the weariness of the tuberculous, as is suggested by the following lines:

> I could lie down like a tired child,
> And weep away the life of care
> Which I have borne and yet must bear.

In some patients, utter exhaustion may precede as well as follow pleurisy.

Pleuritic pain may be present when no "rub" can be detected; and on the other hand a loud pleuritic "rub" can be heard, which may last a long time, and yet no pain may be experienced.

Pain may be referred to the opposite lung, as noted by Laënnec. The referred pains of diaphragmatic pleurisy, which occur in the shoulder and in the abdomen, are apt to lead to diagnostic errors. The abdominal pains confuse surgeons and at times lead to unnecessary operations. A simple test, and at times useful, which I suggested for diaphragmatic pleurisy, is to order the patient to lie on the affected side. In such a position the recumbent diaphragm at first makes an increased excursion and this intensifies the pain of diaphragmatic pleurisy.

In general, the symptoms of tuberculous pleurisy may simulate those of pulmonary tuberculosis; namely, a dry unproductive cough, malaise, fever, accelerated pulse and digestive disturbance. The latter is at times most marked when pleurisy with effusion occurs on the left side.

DIAGNOSIS

Judging by the large number of pleuritic adhesions found at autopsies, pleurisy must be overlooked often when it is present. All chest pain and pain referred to the shoulders, arms and abdomen should lead a physician to suspect pleurisy. Sometimes such pains may originate from diseased tonsils and teeth. Cystic breasts in women, certain heart conditions, herpes zoster, gastric and spinal disease, and other possible causes may produce chest pains.

Percussion is of great service in detecting change of resonance, and percussion with the tips of all four fingers should be used over the lung bases.

Auscultation enables the physician to detect quiet breathing and the pleuritic rub. I have described a method of auscultatory percussion which is of service in detecting pleuritic effusion. Palpation of the trachea and of the position of the heart apex beat are important.

Laënnec's egophony is of distinct value in detecting pleurisy with effusion. Laënnec also called attention to the bulging of the side in pleurisy with effusion, and the retraction of the side which followed healing. Laënnec noted the persistence of respiration along the spinal column in patients with effusion. Good roentgenograms of the chest should always be taken and studied carefully. Any difference in the lighting of the two sides should be noted and the pleural sinuses carefully compared. Subpleural deposits are occasionally seen and definite parenchymatous lesions may be detected.

TREATMENT

Rest, by means of strapping and posture, and heat, by means of an electric pad, are the best symptomatic methods of treatment.

A patient who develops a tuberculous pleurisy should be given a long period of general rest, just as a patient with pulmonary tuberculosis, and the regimen should be continued for many months after all constitutional signs have ceased. It may happen at times that a definite parenchymatous tuberculous lung lesion was present at the onset of the pleurisy, which became absorbed during the illness. In these and other cases the roentgenograms taken after convalescence will lead physicians to be too optimistic regarding the future.

There can be no doubt that many of the most malignant cases of pulmonary tuberculosis are in patients who give a history of pleurisy with effusion some years previous to their coming for treatment of pulmonary disease.

The effusion that accompanies tuberculous pleurisy will usually be absorbed and paracentesis is not always necessary. In some patients who present definite pulmonary lesions, the presence of the effusion may allow artificial pneumothorax to be undertaken. With some patients it is exceedingly difficult to decide whether this procedure should be followed. If the opportunity is neglected, the development of adhesions will prevent the operation, should the progress of the pulmonary process require it. In a few patients I have succeeded in administering artificial pneumothorax when a history of completely reabsorbed pleurisy with effusion has been known. This experience, however, is rare.

Should extensive parenchymatous lung lesions be recognized, especially with cavitation, pneumothorax treatment should be instituted, provided the opposite lung is sufficiently free from disease. The tuberculous effusion may at times become purulent. If uncomplicated by secondary organisms, repeated aspiration usually results in cure.

COMMENT

Tuberculosis in any part of the body requires a long time for elimination or arrest. Tuberculosis of the pleura originating in an apparently healthy individual should not be regarded lightly. Two or three months of rest may bring about apparent cure, but actually from one to two or three years of a carefully regulated life is necessary in order to safeguard such patients against future pulmonary disease.

A study that would seem worth while in pulmonary tuberculosis would be to ascertain the end-results in a large number of patients who have at some time suffered from tuberculous pleurisy with effusion.

Allard and Koester noted that of 514 cases of pleurisy with effusion, no less than 47.7 per cent, in later years, developed pulmonary tuberculosis. They also found a history of pleurisy in 650 out of 2,123 patients who developed tuberculosis.

Lawrason Brown, in discussing the relative value of diagnostic data, places the history or presence of pleurisy with effusion first among five criteria.

Marfan considered that subjects who had recovered from lupus or tuberculous glands were refractory to the development of pulmonary lesions.

Similarly, tuberculous lesions in joints and bones appear to have value in preventing serious lung disease. Possibly in some patients an attack of tuberculous pleurisy may render the lungs more immune.

Theoretically, pleurisy, which is followed by adhesions, should render service by contributing to the "rest" of the organ; or possibly the reverse might happen.

The general optimism, however, regarding the outcome of pleurisy with effusion is not justified and pleuritic disease should be regarded as seriously as pulmonary hemorrhage.

402 Burns Building.

Clinical Notes, Suggestions and New Instruments

COMPARATIVE EFFECT OF LIVER AND LIVER EXTRACT ON DIABETES IN A CASE OF COMBINED PERNICIOUS ANEMIA AND DIABETES *

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This case is being reported primarily to record the comparative effect of whole liver and liver extract on diabetes in a case of combined pernicious anemia and diabetes. It is, moreover, of some interest to add another case of this association to the seven already on record, as recently reported by Hitzrot.[1] This combination of diseases is in all probability coincidental, although they do have some possible predisposing points in common: the majority of the cases of each occur at the same age period; both are more frequent in persons who are overweight, and the achylia gastrica that so frequently precedes pernicious anemia is rather common in diabetes, as was shown by Bowen and Aaron,[2] and later by others.

In 1929, Blotner and Murphy [3] presented what appeared to be substantial evidence that raw liver pulp and a fraction of liver extract had definite blood sugar reducing properties. This fraction was composed of insoluble fats, connective tissue and proteins, and was not effective in the treatment of pernicious anemia. They also used the fraction that was effective in pernicious anemia but found that it had no effect on the blood sugar. They felt that 180 Gm. of raw liver pulp was equal to about 10 or 15 units of insulin; these impressions were gained by the use of tolerance tests and by repeated observations on several well standardized diabetic patients over a long period. Murlin, Pierce and Gregg [4] state that the insulin content of fresh liver may be the explanation for these results.

CLINICAL HISTORY

A man, aged 55, developed anemia in September, 1928. He improved after the use of liver and liver extract. In March, 1929, diabetic symptoms appeared and his weight dropped from 155 to 127 pounds (from 70.3 to 57.6 Kg.) in a short time. When I saw him in May, he had been taking 15 units of insulin daily for only a few days and he had had no liver for five weeks. His maximum weight had been 185 pounds (84 Kg.) in 1927. It had always been his habit to eat liver once a week.

Physical examination showed advanced pyorrhea about the remaining lower teeth. The spleen was not palpable and there was no evidence of involvement of the central nervous system.

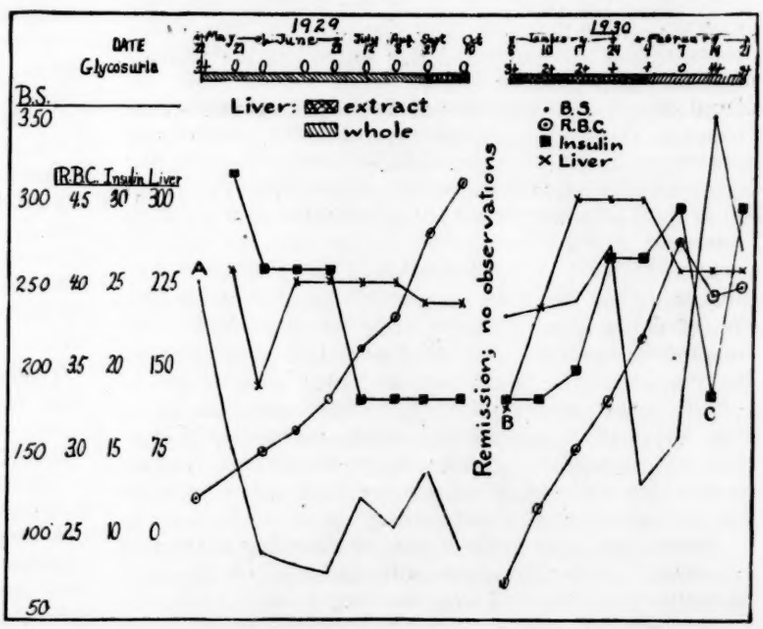
Achylia gastrica was present. The blood was typical in all respects of pernicious anemia. The hemoglobin was 50 per cent. The quantitative van den Bergh reaction was 1.82 units. The urine contained a large amount of sugar but no diacetic acid. The blood sugar was 304 mg. during digestion. He was given a diabetic diet containing 80 Gm. of carbohydrate, 100 Gm. of protein and 120 Gm. of fat. He received about 200 Gm. of liver daily, one half of which was raw pulp. He was not observed in the hospital, but his diet and insulin dosage were carefully taught to him.

RESULTS OF OBSERVATIONS

With the exception of the first blood sugar test, all observations were made between noon and 1 o'clock.

First Period (from May 22 to Oct. 10, 1929).—There was a prompt recession of the diabetes with the use of whole liver and insulin. The insulin dosage had to be reduced to 18 units daily because of hypoglycemia. Liver extract was substituted for whole liver after the blood count approached normal, from September 27 to October 10. During this time there was no essential change in the diabetes.

Second Period (from Oct. 10, 1929, to Jan. 8, 1930).—During this time there was considerable remission of both the anemia and the diabetes. The patient was not under observation. The patient took liver very irregularly, but he had had 120 Gm. daily for ten days prior to the tests made January 8. Insulin, 18 units daily, was continued throughout the period. The patient stated that he had kept strictly to his diabetic regimen except for a slight infraction of diet during the holidays. He found sugar in his urine shortly before he was seen in January, but he admitted that he did not make frequent examinations.



Record of blood sugar in a patient on a diabetic diet and receiving liver and liver extract: *A*, fasting; *B*, for ten days; *C*, insulin reduced three days before this test.

Third Period (from January 8 to February 14).—This was the second period of observation. The anemia was first treated with liver extract, during which time the insulin dosage had to be nearly doubled, which suggested that the whole liver had been effective in lowering the blood sugar during the first observation period. February 4, however, at a point when both the diabetes and the anemia were well under control, whole liver cooked and raw, 80 Gm. a meal, was substituted for the extract. There was no further lowering of the blood sugar and no insulin reactions. Three days prior to the last observation on February 14, the insulin was sharply reduced 10 units, bringing the dosage back to a point which had controlled the diabetes during August, September and October. The blood sugar, however, was found to be 350 mg., and the urine contained a 4 plus sugar reaction in all specimens during the twenty-four hours. Insulin was then increased to 28 units; a week later the blood sugar was 263 mg. and the urine contained a 3 plus sugar reaction.

SUMMARY

No evidence of a blood sugar lowering action of liver was found in the case of combined diabetes and pernicious anemia here reported. The diabetes in this case became more severe during the two month period that the patient was not under observation.

* From the Buffalo General Hospital and the University of Buffalo School of Medicine.

1. Hitzrot, L. H.: Coincident Diabetes Mellitus and Pernicious Anemia, Am. J. M. Sc. **177**: 213 (Feb.) 1929.
2. Bowen, B. D., and Aaron, A. H.: Diabetes and Gastric Secretion, Arch. Int. Med. **37**: 674 (May) 1926.
3. Blotner, Harry; and Murphy, W. P.: The Effect of Liver on the Blood Sugar Level, J. A. M. A. **92**: 1332 (April 20) 1929.
4. Murlin, J. R.; Pierce, H. B., and Gregg, D. E.: The Relation of the Liver to the Action of Insulin, Am. J. Physiol. **90**: 458 (Oct.) 1929.

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION HAS APPROVED THE FOLLOWING ARTICLE.

H. J. HOLMQUEST, Secretary.

THE REHABILITATION OF THE DISABLED

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During the last two or three decades, a new era in the practice of medicine has gradually developed. This is frequently referred to as the era of physiologic medicine, of physiologic surgery. Great stress will always be laid on the need of diagnosis before adequate treatment can begin; on the importance of clear knowledge in pathology before adequate diagnosis can be made, and on the value of therapeutic and surgical methods. But greater and greater emphasis is being placed on the need of viewing the results of treatment from a physiologic point of view; that is, the prevention of abnormal states and the restoration of function in diseased organs or members to as near normal as is humanly possible.

From a surgical standpoint such physiologic results cannot be obtained if the surgeon is content with the immediate surgical end-result, if he loses interest in the follow-up of the case before he is assured that the functional result has been attained. Healing the burns and then leaving the patient to his own devices to overcome the scar contractures is not adequate treatment. The best possible reduction of the fractured leg and treatment until solid union has occurred is poor surgery if meanwhile the surgeon has paid no attention to the protection of adjacent joints, has given no consideration to maintaining muscle tone, and fails to utilize those adjuncts of treatment which will assure a rapid return to normal function of the injured leg.

Only by the continued interest of the physician in his patient during the long period of chronicity of the disease or injury, during the long days of convalescence, even following the patient back on the job to ascertain that proper work is secured or assigned to him and making sure that both his mental and physical restoration is assured can the ideals of physiologic medicine be achieved.

Definite knowledge of those remote and so often neglected therapeutic regions which lie beyond the therapeusis of the acute stage of disease and injury are necessary. In these regions are found the provisions for physical therapy, occupational therapy, suitable convalescent care, placement at proper employment and often retraining for new work when the injury or disease has made return to the old job impossible. A sympathetic understanding of these provisions and sufficient knowledge to utilize them is absolutely essential for the attainment of this ideal of modern medicine—the rehabilitation of the disabled.

The field and scope of rehabilitation of the disabled lead the physician to consider many lay adjuncts that heretofore have never been considered a part of medicine. But to accomplish successfully the rehabilitation of patients the profession must make contacts with these lay agencies.

Rehabilitation includes:

A. Prevention:

1. By analytic study of the disease or accident to prevent a similar occurrence to other individuals.

2. By treating the case in such a manner that function will be preserved in adjacent parts; that traumatic neuroses will be combated from the start; that habits of idleness and loafing will be prevented.

B. Treatment:

1. The best possible treatment directed toward the earliest possible recovery with the greatest possible functional restoration.

2. The use of physical therapy as an aid in functional preservation and restoration.

3. The use of occupational therapy to combat habits of idleness and often for the purpose of retraining for new work.

C. Convalescent care:

1. The early removal of the patient from hospitalizing influences.

2. Seeking convalescent provisions for those who room and board or whose home conditions furnish unsuitable convalescent environment.

D. Placement at suitable employment:

1. Light occupations in the industry until such a time as the patient can return to his regular position.

2. Choosing a suitable job when disability prevents return to his old position.

3. Development of placement bureaus for the handicapped.

E. Training for a new vocation when disability unfits for the usual occupation:

1. Cooperation with state vocational training bureaus.

2. Work for the shut-in.

F. Medical follow-up to see that rehabilitation is completed and so remains.

PREVENTION

The short report blanks furnished by most insurance companies for the reporting of injuries are inadequate for a careful analytic report of the cause of the accident from the surgeon's point of view. Often, in securing the history of the case, the surgeon gains valuable information concerning the cause of the accident or the immediate handling of the case at the plant which, if transmitted to the proper authority, may prevent recurrences of similar accidents.

Example—Mr. B. was admitted to the hospital with several fractured ribs, the result of a small hoisting machine falling over and striking him in the chest. He told the surgeon that this machine was old and insecurely fastened and that he had complained about it but that nothing was done. Report of these facts to the personnel office at the given plant resulted in correcting similar conditions in several of these small hoisting machines, thereby preventing future accidents.

Every physician or surgeon today engaged in private or hospital practice secures information from certain patients that shows a work hazard as responsible for a given condition. A short letter stating the facts to the responsible industry will in most instances result in a correction of the condition and therefore the prevention of a similar disease or accident. This type of prevention work is just as essential as the reporting of contagious diseases or of lead poisoning, yet how few physicians think of this as a duty?

Almost every surgeon knows that a wrist drop should be combated from the start by the use of a cock-up splint; that a foot allowed to hang downward in the position of foot drop for even a few weeks will mean a prolonged disability case and often a permanent

disability; that a shoulder joint injury treated for any length of time by strapping the arm tightly to the body or by even carrying the arm in a sling usually means inability to abduct or elevate the arm for weeks or months after the original injury is healed, or that prolonged immobilization of a limb in a circular cast without any opportunity for massage of the muscles or very limited exercise of the adjacent joints means weeks and months of unnecessary treatments to overcome conditions that could have been prevented.

Hardly a week goes by that a case of this nature is not referred for reconstructive surgery. A surgeon must be "rehabilitation conscious" at all times if he is to prevent these concurrent disabilities.

TREATMENT

To the surgeon interested in rehabilitation will be referred in the course of time many patients in dire need of reconstructive surgery. Deformities and handicaps must be corrected and function restored as far as is humanly possible before the subsequent steps of rehabilitation can be completed. This is becoming so well recognized that state departments of vocational reeducation for the disabled, state compensation boards, schools interested in the training and education of crippled children, industries and railroads and even private organizations interested in the disabled are frequently sending patients to these surgeons to ascertain whether anything can be done to improve their physical handicaps.

This type of surgery is often referred to as physical rehabilitation. Too often it is apparent to the reconstructive surgeon that if proper measures had been instituted during the initial treatment this subsequent physical rehabilitation would not be necessary.

Examples—Ununited fractures make up a large percentage of these reconstructive cases. There are many of these in which the cause of nonunion cannot be ascertained. In others the commonest causes are, first, repeated efforts at reduction in order to secure a good roentgenographic result, that is, to show the fragments almost perfectly alined; and, second, the open treatment of fractures with the application of some foreign material as an internal splint, usually a plate.

The best example of repeated attempts at reduction occurs in fractures of both bones of the forearm. It is extremely difficult to secure end to end apposition of the fragments in both bones. Repeated and repeated efforts only tend to cause nonunion. A fair apposition of these fragments will in nearly every instance give an excellent functional result. But surgeons are afraid to present before industrial boards even good functional results when the roentgenogram shows very poor alinement of the fractured fragments. This attitude will not change until surgeons educate and hammer into the heads of commissioners of industrial boards and of lawyers that what we are seeking is good *function* and not beautiful x-ray pictures.

Approximately 33⅓ per cent of all fracture cases referred to me for nonunion have previously undergone operation. In nearly every instance a plate or other foreign material has been used in an attempt to hold and secure union. Cunningham of Oklahoma City, the surgeon used frequently by the state industrial commission for reconstructive surgery, states that he has a bucketful of these plates removed in nonunion cases. I recognize that in the hands of many excellent, thoroughly trained surgeons, this method may prove almost perfect but from my experiences and observations the great majority of surgeons cannot use them successfully.

Deformities of the hands following tendon and nerve injuries contribute largely to reconstructive surgery. In many of these cases the original operations by the surgeon treating the initial injury would have been successful if that surgeon had been familiar with and had had the facilities for administering proper physical therapy. Quite frequently I find no operative procedure necessary in such cases but simply refer them to the physical therapy department for physical rehabilitation methods.

The stiff shoulder joint following treatment for dislocation or fractures in and about the upper end of the humerus, bursitis and traumatic arthritis make up a very high percentage of cases referred for reconstructive treatment. In the majority of these cases if the initial treatment had been aimed at the protection of the weak group of muscles, the abductors and external rotators, the subsequent reference of the case would never have been necessary. Treating the acute injuries about the shoulder joint with the arm abducted and elevated—the airplane splint position—and the use of early heat and massage to the part would eliminate many cases of permanent handicap.

Breaking up the stiff joint by manipulation under anesthesia results in many permanent, bony ankyloses. This is especially true when such manipulative treatment is applied to the elbow joint. The slower methods of physical therapy are far better.

In a certain number of skull fractures, the syndrome of persistent cerebral contusion develops. Too often these sufferers from indefinite symptoms are called malingerers and are mishandled for months or even years. They make up a pitiful class of the handicapped for whom rehabilitation is very difficult.

The same is true of many back injuries inadequately diagnosed and therefore inadequately treated during the acute injury. I have had six cases of compression fractures of the vertebrae referred to me during the last two years, months after the injury had occurred, which had gone undiagnosed simply because a lateral roentgenogram had not been made. Every one of these patients was handicapped and in need of rehabilitation.

PHYSICAL THERAPY

No surgeon today is adequately equipped to treat trauma cases who is not familiar with those physical therapy measures which will assist in restoration of function. It is not necessary for him actually to administer the physical therapy, but he must know when massage and active exercise should start in every type of fracture; when heat, massage and muscle training exercises are indicated in nerve and tendon injuries; when heat in the nature of diathermy is indicated.

Manufacturers of certain forms of machine therapy, for example, lights and electrical apparatus, have been active in advertising and selling these agents to the profession until many surgeons think that physical therapy refers only to such modalities. They have their uses in the hands of specialists in physical therapy but are not necessary for the simple physical therapy procedures that are required in 95 per cent of the trauma cases.

Again, physical therapy is in bad repute with many insurance companies and even industrial boards because too many surgeons having no knowledge of true physical therapy have employed light treatment at $2 a treat-

ment for a large number of their cases. Take a stiff elbow: One can treat it for months and years by the best light treatment ever invented and never secure one whit of functional restoration, whereas early heat, gentle massage and daily, gradually increasing passive and, above all, active exercises will, in the majority of cases, result in full restoration of function.

Nor can good results be expected from turning these patients over to an untrained office assistant with instructions to give physical therapy. It requires a well trained, intelligent technician and one perfectly willing to use her hands in massage and patient, prolonged muscle training exercises to secure the best results.

Finally, physical therapy should not be limited to office practice or to the ambulatory case. It should start, in many instances, while the patient is still in the hospital, during the early days of his recovery. Therefore, every modern hospital must be equipped with a physical therapy department supervised by a surgeon who understands this work and manned by these trained technicians who can administer it. While visiting hospitals I see many of them equipped with diathermy machines or expensive quartz lights but with no technician capable of going from patient to patient to give massage here, exercise there and heat in nearly every case. Simple equipment and intelligent handwork are the acme of successful physical therapy.

OCCUPATIONAL THERAPY

To the surgeon engaged in industrial practice who has observed the marked improvement in a disability case after being placed at some light employment in the industry, the idea of occupational therapy should not be new. Work is one of the greatest therapy measures and one often neglected. It takes the mind off of one's disabled state. It improves morale and awakens or renews interest in creating something and gives promise of future usefulness to one whose future seemed hopeless. Thus it can be made diversional or purposeful.

C. B., a Polish boy, 19 years of age and only a common school graduate, had worked for five years in a printing plant. He was a laborer without much future. Then a heavy roll of paper fell from a height, struck him across the shoulders, and "jack-knifed" his spine. As a result, he suffered a severe fracture of the first lumbar vertebra with immediate complete paralysis of his lower extremities. Within two hours a laminectomy was performed and the cord freed.

There followed a year before he was again able to walk, seven months of which was spent in St. Luke's Hospital. Physical therapy started the first day by careful protection of the feet from foot drop. Within two weeks light massage was started, followed at the end of another week by very mild but definite muscle-training exercises. About this time the occupational therapy technician taught him to weave and later to make baskets. We talked to him of his future and after a time he became interested in reading and then studying grammar and mathematics. He was led to see that his future work must be with his head. At the end of six months he was able to go to the work shop in the hospital and there he spent hours trying to run the gig-saw by pedaling. Before leaving the hospital he had succeeded. After going home he pedaled his mother's sewing machine. He reported every other day to the physical therapy laboratory and here continued his physical rehabilitation. By the end of a year he was able to walk with the aid of two canes. He entered a business school and learned shorthand and typewriting. He has now been at work for two years as a typist in the same printing plant. He goes to night school and has almost completed a course in accounting. He walks everywhere with the aid of only one cane.

This is the story of rehabilitation. It involves correct surgery, immediate attention to preservation of function and later physical therapy to restore function. Occupational therapy entered into the process, first diversional, then purposeful as an aid to restore function and later as a means of retraining for new work. Today this Polish boy says, with a huge grin on his face, "It was a lucky day for me when I broke my back."

CONVALESCENT CARE

It costs from $3 to $4 a day to keep an injured worker in the wards of most hospitals. It really costs the hospital from $4.50 to $5.50 a day to maintain these beds.

A study of this problem for several years has revealed that in at least 25 per cent of the cases of trauma the patients are kept in the hospital for weeks and months for several reasons; namely, for the convenience of the attending surgeon; because compensation laws include hospital care and the patient prefers to remain as it cuts down expenses at home; because the injury, as a fractured femur, requires months to heal; because too often the patient rooms and boards and there is no one to look after him if he leaves the hospital and because too often home environments contraindicate convalescence. Provisions for this period of convalescence is the missing link in the chain of caring for the sick and disabled. There is a way station needed between the hospital and back to the job. Because of this missing link, industry and the hospitals are both paying an enormous sum annually.

Convalescent centers, such as the one maintained by the Burke Foundation and several maintained by hospitals in New York as well as the convalescent homes scattered over the country, can be operated at an average cost of $2 a day for each patient. Think of the saving to industry and to the hospital if 25 per cent of the ward patients, after a month or six weeks in the hospital for acute diseases, could be transferred to a convalescent center.

In such a center, occupational therapy, physical therapy, outdoor exercise and even vocational training replace the idleness, the reading of cheap novels, the card games and the gossiping and complaining of food and nurses which make up the life of the average ward patient in the average hospital. It is difficult to make the hospital for acute diseases the cheerful, hope inspiring, busy place that can be made of the convalescent center. The one is to care for the acute cases, the other to rehabilitate the cases of prolonged disability. It is applicable to a large percentage of both our medical and surgical cases.

It may take years to put across this idea, but it must come as a part of any definite, complete rehabilitation program.

PLACEMENT

When the injury is received in any one of several large industries, the replacement in employment of the disabled or handicapped individual is not usually a difficult problem. The enlightened industry today as a rule provides jobs for their handicapped employees, disabled in the course of employment.

But there are hundreds and thousands of handicapped individuals in every community, because of illness or of injuries received at home or on the streets, for whom employment is one of the gravest problems of our time. It is surprising how many of these individuals are refused jobs because they cannot pass the medical

examinations of large industries, and smaller industries do not need them.

In Chicago, cooperating with the State Free Employment Bureau, the Council of Social Agencies, through its Committee on the Care of the Disabled, has organized a Central Placement Bureau for the Handicapped. During the last year this bureau placed more than 500 handicapped men and women at lucrative employment. Impressed by the work, a group of business men have just organized an advisory council for the Central Placement Bureau and have pledged themselves to finance the bureau so that its work and usefulness can be extended.

This is not medical work, yet if, as surgeons, we are aiming for an economic end-result for our patients, it is one of the most important steps in the rehabilitation program. It is a movement which every medical man should abet in every possible way.

FOLLOW-UP

In the doctor's office of the large industry, every opportunity is afforded the plant surgeon to follow up his cases. In this way he can see that their rehabilitation is completed and so remains.

For those of us not so situated we must develop our follow-up clinics or office hours devoted to seeing these patients with permanent disability periodically until assured that full functional restoration, as far as is humanly possible, has been secured; that the work they are doing is compatible with their handicap, and above all that the microbe of dependence has not entered the case and undone all our efforts to rehabilitate. At St. Luke's Hospital we have found that these follow-up clinics have had the greatest influence toward arousing the interest of the physician in the future welfare of his patient.

CONCLUSION

This, then, is the story of rehabilitation of the disabled. In many respects it is still an ideal, yet each year, since the end of the World War, has seen some new development that has brought the ideal nearer the goal of practical application. More and more physicians are thinking in terms of physiologic medicine, reconstructive medicine and reconstructive surgery. Hospitals are adding occupational therapy and physical therapy departments and the staffs are gradually learning to use them for the better improvement of functional results. Follow-up clinics are being added. State and private organizations are developing vocational training and placement centers for the handicapped.

The Council on Physical Therapy of the American Medical Association offers one of the best examples of the growth and development of this ideal into practical application. The Council was organized five years ago and was made up of physicians and scientists of the Association. The work of weeding out the good from the bad in physical therapy required considerable time. Gradually they have come to recognize that physical therapy and occupational therapy are adjuncts to the usual medical and surgical procedures which represent a continued interest in the patient's disability beyond the acute stage, an interest that, properly directed, will assure the greatest possible functional restoration in every disability case. This year the Council is thinking less in terms of "machine therapy" and more of those methods which will prevent disabilities and which will give rehabilitation to the disabled.

122 South Michigan Avenue.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, Secretary.

ALPHANAPHTHOL. — Alphanaphthol. — 1-hydroxynaphthalene, $C_{10}H_7OH$.

Actions and Uses.—The actions of alphanaphthol resemble those of betanaphthol. The literature is rather contradictory and unsatisfactory as to the relative toxicity, but it is probably of a similar order. Alphanaphthol is employed locally as an antiseptic and germicide; it is not generally used internally. For a discussion of the action and effects of naphthol compounds see Naphthol Compounds, New and Nonofficial Remedies, 1930, p. 286.

Dosage.—Externally, solutions and ointments containing from 0.1 to 1 per cent of alphanaphthol are used; as a gargle, vaginal douche and urethral irrigant, solutions containing 0.05 to 0.5 per cent are used.

Alphanaphthol occurs as colorless or faint gray glistening crystals, or a white crystalline powder, possessing a faint phenolic odor and a pungent taste; readily soluble in alcohol, ether, chloroform and benzene; very slightly soluble in hot water and practically insoluble in cold water; readily soluble in aqueous solutions of alkali hydroxides. A saturated aqueous solution is neutral to litmus. Alphanaphthol melts between 93 and 95 C.

A cold, saturated, aqueous solution of alphanaphthol, when mixed with ammonia water, develops a bluish fluorescence. Dissolve about 0.1 Gm. in 5 cc. of a 20 per cent aqueous solution of potassium hydroxide, add 1 cc. of chloroform and gently warm the mixture to 50 C.: the aqueous layer becomes a blue color, changing to green and finally brown. Dissolve about 0.1 Gm. in 5 cc. of sodium hydroxide solution and add 5 cc. of tenth-normal iodine solution: a violet turbidity results (*distinction from betanaphthol*, which gives a clear colorless solution). Place 1 Gm. in a 250 cc. Erlenmeyer flask, add 50 cc. of water, boil for five minutes, cool, filter through paper and divide into separate portions of 10 cc. each; to one portion add 1 cc. of a saturated aqueous solution of bleaching powder: a dark violet coloration results, followed by a flocculent precipitate of the same color, changing to reddish brown (*distinction from betanaphthol*, which gives a pale yellow color and is bleached by an excess of reagent). To a second portion add 0.5 cc. of ferric chloride solution: a milky opalescence results, gradually turning red and changing to a violet (*distinction from betanaphthol*, which gives a pale green color). Shake about 1 Gm. with 50 cc. of water in a glass stoppered cylinder at frequent intervals for fifteen minutes and filter: separate portions of 10 cc. yield no opalescence with 1 cc. of diluted nitric acid and 1 cc. of silver nitrate solution *(halides)*; no turbidity with 1 cc. of diluted hydrochloric acid and 1 cc. of barium chloride solution *(sulphates)*; no coloration or precipitation on saturation with hydrogen sulphide *(salts of heavy metals)*.

Incinerate about 1 Gm. of alphanaphthol, accurately weighed: the residue does not exceed 0.05 per cent. Dissolve about 1 Gm. accurately weighed, in 10 cc. of a 10 per cent aqueous sodium hydroxide solution, collect the insoluble material, if any, on a Gooch crucible, transfer the insoluble material with 3 portions of a diluted sodium hydroxide solution (1 part of sodium hydroxide plus 99 parts of water) using 5 cc., 5 cc., and 3 cc., respectively, finally wash with 2 portions of water using 5 cc. each, dry and weigh: the alkali soluble material does not exceed 0.1 per cent.

ALPHA-NAPHCO.—Compound Solution of Alphanaphthol.—Alpha-naphco contains alphanaphthol 10 Gm., glycerin 32 Gm., soft soap (prepared from cottonseed oil and potassium hydroxide) 23.8 Gm., water to make 100 Gm., gluside and essential oils to flavor.

Actions and Uses.—See preceding article under alphanaphthol. When tested against *B. typhosus* by the U. S. Hygienic Laboratory method, alpha-naphco has a phenol coefficient of 1.46.

Dosage.—See preceding article under alphanaphthol.

Manufactured by the Carel Laboratories, Redondo, Calif. No U. S. patent or trademark.

PYRIDIUM.—Phenylazo-2-6-diamino-pyridine monohydrochloride. — Phenylazo-α-α-diamino-pyridine monohydrochloride. $C_6H_5N:N\ C_5H_2N\ (NH_2)_2(2)(6)\ HCl$. The monohydrochloride of an azo dye of the pyridine series, phenylazo-α-α-diaminopyridine. Pyridium contains 28 per cent of nitrogen.

Actions and Uses.—Pyridium has marked penetrating power and is non-toxic and non-irritant in therapeutic dosage. It is rapidly eliminated through the urinary tract. It is bactericidal in aqueous solution against staphylococcus, streptococcus, gonococcus, *B. coli* and even *B. diphtheriae*. It is proposed for use in gonorrheal infections, urinary diseases, and in colon bacillus and mixed infections. In addition to its oral administration it is proposed for irrigation and other local application on the basis of its lack of harmfulness and of its bactericidal activity.

Dosage.—Pyridium is usually administered orally in doses of 0.2 Gm. (3 grains) three times daily either as powder in capsules or as tablets; for local application to wounds, ulcers and infected surfaces an aqueous solution of 0.5 to 1 per cent may be used; for urethral injection a 0.3 per cent solution is used.

Pyridium should not be used in connection with compounds containing mercury as it releases the mercury from such compounds. It is contraindicated in uremia and in severe disorders of the kidneys of a noninfectious type.

Pyridium is only slightly soluble in cold water, about 1 part in 300. However, it will form supersaturated solutions relatively easily. Pyridium will precipitate out of a 2 per cent (supersaturated) solution after approximately two days; it will precipitate out of a 1 per cent solution only after months. A 1 per cent solution may be stabilized for months by the addition of 10 per cent dextrose, U. S. P. X. Aqueous solutions should be prepared with distilled water, as the salts present in the tap water of many localities are liable to precipitate the free base, phenylazo-α-α-diamino pyridine.

Manufactured by the Pyridium Corporation of New York (Merck & Co., Inc., distributor). U. S. patents 1,680,108 (Aug. 7, 1928; expires 1945), 1,680,109 (Aug. 7, 1928; expires 1945). U. S. trademark 251,253.

Aqueous Solution of Pyridium, 1 per cent: Pyridium 1 Gm., anhydrous dextrose 10 Gm., distilled water to make 100 cc. This is a supersaturated solution; any deposit appearing may be redissolved by warming.

Pyridium Ointment, 10 per cent: Pyridium, 10 per cent; wool fat, 77.5 per cent; expressed oil of almond, 12.5 per cent.

Pyridium Tablets, 0.1 Gm.

Pyridium occurs as a red, odorless, microcrystalline powder, possessing a slightly bitter taste; slightly soluble in cold water, about 0.3 part in 100 parts, soluble in boiling water, about 5 parts in 100 parts; slightly soluble in alcohol, soluble in glacial acetic acid; insoluble in acetone, benzene, chloroform, ether and toluene, although these solvents might be colored slightly yellow by its presence, if the solvents are not entirely free from water; the aqueous solution (1 in 500) is red and is distinctly acid in reaction when measured by means of the hydrogen electrode. On addition of diluted sulphuric acid or a dilute solution of sulphates to an aqueous solution of pyridium, a precipitate forms.

Digest about 0.2 Gm. of pyridium with 10 cc. of diluted hydrochloric acid for thirty minutes at 50 C.; the dihydrochloride separates as small, dark red crystals or scales; decant the supernatant liquid and add 20 cc. of water to the crystalline precipitate: the material dissolves. Dissolve about 0.5 Gm. of pyridium in 500 cc. of water; add an excess of ammonia water; collect the resultant free base, phenylazo-alpha-alpha diamino pyridine on a filter paper, wash, recrystallize from water, and dry at 100 C.: it melts at 137 to 139 C.

Dry about 1 Gm. of pyridium, accurately weighed to constant weight over sulphuric acid in a partial vacuum: the loss in weight does not exceed 1 per cent. Incinerate about 1 Gm., accurately weighed, previously dried over sulphuric acid: the ash does not exceed 0.3 per cent. Dissolve about 1 Gm. of pyridium, accurately weighed, previously dried over sulphuric acid, in 200 cc. of warm water; collect the insoluble matter, if any, in a weighed Gooch crucible; wash the insoluble matter with hot water, dry and weigh the residue at 100 C.: the insoluble matter does not exceed 0.5 per cent. The nitrogen content determined according to the Dumas method in Clarke's Handbook of Organic Analysis, ed. 2, p. 199: the nitrogen is not less than 28.0 per cent nor more than 29.3 per cent, when calculated to the dried substance. Transfer about 0.5 Gm. of pyridium, accurately weighed, to a 600 cc. beaker, and dissolve in 250 cc. of water, previously boiled to remove carbon dioxide: the hydrogen chloride content determined by titration with tenth-normal sodium hydroxide solution using the hydrogen electrode and a calomel cell (normal potassium chloride solution) corresponds to not less than 14.5 per cent nor more than 15 per cent of hydrogen chloride, when calculated to the dried substance.

POLLEN ANTIGENS-NATIONAL.—Liquids obtained by extracting the dried pollen of plants with a 0.5 per cent sodium chloride solution containing approximately 0.28 per cent of sodium bicarbonate, and 0.4 per cent of phenol.

Actions and Uses.—See Allergic Protein Preparations, New and Nonofficial Remedies, 1930, p. 23.

Dosage.—See Allergic Protein Preparations, New and Nonofficial Remedies, 1930, p. 23.

Pollen Antigens-National are marketed in packages of one 5 cc. vial containing 50 units per cubic centimeter; in packages of one 5 cc. vial containing 100 units per cubic centimeter; and in packages of one 5 cc. vial containing 250 units per cubic centimeter.

Manufactured by the National Drug Co., Philadelphia. No U. S. patent or trademark.

Ragweed Pollen Antigen-National (Ambrosia elatior and Ambrosia trifida); Timothy Pollen Antigen-National (Phleum pratense).

Pollen antigens-National are prepared by the following method: the pollen is weighed and extracted with ether. After removal of the ether the pollen is mixed with the extracting liquid consisting of a 0.5 per cent sodium chloride solution containing approximately 0.28 per cent of sodium bicarbonate and 0.4 per cent of phenol and then covered with toluene. After four days, during which time the mixture is shaken once or twice daily, the supernatant fluid is decanted and the sediment mixed with a second portion of extracting fluid. As soon as the sediment has settled, the supernatant fluid is decanted and mixed with the first portion. The combined decanted fluid is then subjected to Berkefeld filtration. Each cubic centimeter of the finished liquid represents the extractives of 0.03 Gm. of pollen. The unit is that established by Noon, approximating 0.001 mg. of protein nitrogen.

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT.

W. A. PUCKNER, Secretary.

POMPEIAN OLIVE OIL NOT ACCEPTABLE FOR N. N. R.

Pompeian Olive Oil was presented by the Pompeian Corporation, Baltimore, with the request that it be considered by the Council for inclusion in New and Nonofficial Remedies. The firm presented details to show the care taken and the chemical control exercised to insure a high grade product, and the product might be recognized as a brand of olive oil, U. S. P., marketed under the pharmacopeial name ("Pompeian" being used merely to identify the firm's brand), were it not that claims of unique advantage and therapeutic potency are advanced. The Council cannot admit in reference to this brand of oil the claim made that the "ease of its digestion and assimilation is far greater than that of any other vegetable or animal oil." Claims of medicinal value based on such a composition are unwarranted.

The firm was informed that the Council would find no objection to this product's being advertised as a high grade olive oil under conditions that would make it acceptable as a nonmedicinal food; that the admitted therapeutic uses apply to other fats and do not constitute an occasion for special consideration; that this oil, if presented without claims of special therapeutic value but simply as a pharmacopeial product, might be considered for exemption under the Council's rules; and that Pompeian Olive Oil, as presented, is unacceptable for New and Nonofficial Remedies. The firm replied, agreeing that, in view of the lack of evidence to substantiate the claims presented, such claims are considered unwarranted and presented a preliminary report by Dr. Walter H. Eddy submitting evidence to show that Pompeian Olive Oil contained vitamin A in appreciable amount, while vitamin B was not detected, with a report by Dr. Maynard Ladd on the feeding of infants with Pompeian Olive Oil homogenized with fat free certified milk in amounts to give approximately 3.5 per cent of fat in the homogenized mixture. He concludes: "I think we may infer that virgin olive oil of the quality which we used, which was furnished by your company, when freshly homogenized with certified fat free milk, serves at least equally well with certified cow's milk in the nutrition and development of infants in the first year." In place of the originally submitted information the firm submitted a revised description of Pompeian Olive Oil. The statement under Pharmacologic Action reasserts in effect the claim based on ease of assimilation and concludes: "No attempt will be made at this point to recite the medicinal properties of POMPEIAN Olive Oil that arise from its Vitamin A content. The many readily available references to the value of the growth-promoting or antixerophthalmic vitamin should obviate further explanation."

The evidence submitted by Dr. Eddy regarding the vitamin A content of Pompeian Olive Oil and the report of Dr. Ladd's tests are gratifying and worthy of note. Further evidence, besides the Eddy report, however, is needed to show that the vitamin A content of the product differs constantly from that of other brands. The Ladd report also requires further confirmation. Even if confirmed, however, and considering further the firm's somewhat modified claims, these reports do not constitute an occasion to give this brand of olive oil a place in New and Nonofficial Remedies. Olive oil is a well known food. It doubtless has some dietotherapeutic indications; but these are akin to those of butter fat and cream, neither of which would be regarded by the Council as a medicinal food in the sense defined by it. The brand does not have any unique vitamin content such as justifies the inclusion of assayed cod liver oil in N. N. R. The uniqueness of the Pompeian oil lies in the demonstration that it actually contains some vitamin, in contrast with many other commercial edible oils. The Council voted to affirm its decision that Pompeian Olive Oil is unacceptable for New and Nonofficial Remedies.

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SATURDAY, JULY 5, 1930

FOOD POISONING

The expression "ptomaine poisoning" has been for the most part abandoned in medical discussions and diagnosis during the last few years. Ptomaine was the term introduced by Selmi about 1850 and applied to a group of basic substances, having alkaloidal properties, which were obtained from decomposing proteins and were highly toxic to animals, when injected. Presently, however, the rapidly developing knowledge of bacteria and their possible rôle in the genesis of disease directed attention to the microbiotic aspects of the subject.

As Damon [1] has pointed out, since the studies were made that directed attention to the possibility that bacteria might be the etiologic agents in causing illness in man in cases that had previously been regarded as ptomaine poisoning, the bacteriologic investigations of many workers have widened our field of knowledge and shown that a variety of bacterial species are capable of growing in foodstuffs under widely different conditions, and that they must be held accountable for many, if not nearly all, cases of food poisoning formerly attributed to ptomaines. In fact, Damon notes further, at the present time improved methods of detection are more and more frequently indicating that infection of food is responsible for illness in those who consume it. It thus seems probable to Damon that practically all food poisoning, in which illness is not induced by a hypersensitiveness of the individual or by a metallic poison, or in which an alkaloid of vegetable origin is not involved, is due to infection.

Thus the bacterial theory of food poisoning has gradually supplanted the older and somewhat less specific ptomaine or chemical theory. Perhaps it would be more in accord with actual practice to say that investigators of cases of food poisoning, as the present nomenclature expresses it, seek the presence of pathogenic bacteria or their products in the food under suspicion. There are increasing indications that toxic material as well as noxious bacteria need to be taken into consideration. Indeed, this may in some ways represent a return to the older chemical theory, with the exception that the materies morbi is directly attributed to the metabolism of well defined and recognized micro-organisms. This is exemplified in the recent report of Jordan [2] of the University of Chicago. Incriminated food secured during an outbreak of food poisoning contained a yellow staphylococcus in considerable abundance. This apparently produced a toxic substance in broth, as shown by the effect of the sterile filtrate, which, on being swallowed by a human volunteer, gave rise to nausea, diarrhea and prostration of the same character as that observed in the original outbreak. Furthermore, Jordan has now demonstrated that various strains of staphylococci of diverse origin and different cultural characters are capable of generating in broth a substance which, when taken by mouth, produces gastro-intestinal disturbance. This substance is destroyed by boiling and is either destroyed or greatly weakened by being heated at from 60 to 65 C. for thirty minutes. It seems not unlikely to Jordan that bacteria of other groups may produce similar substances that are irritating to the human alimentary tract. From the standpoint of recognizing the immediately harmful factor in many instances of food poisoning, the development of toxic derivatives deserves new emphasis. It is fortunate that such toxic substances usually lose their potency when suitably heated.

1. Damon, S. R.: Food Infections and Food Intoxications, Baltimore, Williams and Wilkins Company, 1928.

2. Jordan, E. O.: The Production by Staphylococci of a Substance Causing Food Poisoning, J. A. M. A. 94: 1648 (May 24) 1930.

A CRITICAL CONSIDERATION OF OBESITY

Obesity has been described as a state in which the amount of fat stored in the body is excessive. The depletion of this fat reserve therefore is the end sought in all attempts at the reduction of obesity. Theoretically, at least, this should be accompanied by a reduction in the energy intake to such an extent that the body will be required by the exigencies of the inevitable metabolism to consume some of its energy reserves to meet the current needs. The process may be accelerated by increasing the demands for energy. This means, first of all, by augmenting the amount of work done. Muscular exercise always increases the conversion of energy and is the foremost factor in determining the food requirement on the one hand or the tissue catabolism on the other.

These are the seemingly simple principles on which the augmentation, maintenance or depletion of the body energy reserves may be assumed to depend in adult life when growth or the production of new tissue is not under consideration. Gain or loss of fat becomes a matter of physiologic bookkeeping, representing the balance between supply and demand in the organism. If this were the whole story, the problem of altering body weight should be comparatively simple. It usually is. Now and then, however, despite a marked reduction in the energy intake, decrease in body weight

apparently is not attained. Indeed, persons have been known actually to gain in weight on an admittedly inadequate energy intake. Such experiences have led to the classification of obesity into exogenous and endogenous types, the latter being ascribed to "constitutional disease that unrelentingly causes a progressive deposition of adipose tissue, independent of activity or dietary habit." As might be expected, the omnipotent endocrine glands are assumed to develop the anomaly in which restriction of food intake fails to lead to weight reduction.

In considering some of the assumptions of so-called endogenous obesity, Newburgh and Johnston [1] of the University of Michigan Medical School have insisted that obesity is always caused by an overabundant inflow of energy. The excess is deposited as adipose tissue. They remind us of features that are all too often overlooked in the study of human size: that body weight is the resultant of two factors—gain or loss of tissue and a gain or loss of water. The loss of one and a gain in the other may neutralize each other; or a large retention of water may cause a gain in weight, even though body tissue has been consumed, and may lead an observer who fails to take water exchange into account to draw erroneous conclusions.

The studies at Michigan in which the water balance as well as the energy debit and credit are taken into account leave no doubt that the response of various types of obese people does not differ from that of normal people. All of them oxidize body tissues in accord with the prediction from the caloric deficit. Retention of water may proceed for several days or loss of water may be suddenly precipitated. The body weight from day to day under conditions of reduction in energy intake may show no parallelism to the expected figures. In the long run, however, the body weight almost always approaches the predictable figure. In reply to the query as to how long a person may maintain his weight in the face of a diet deficient in calories, Newburgh and Johnston cite their own observations that the failure to lose weight is only a matter of days. Thus far the longest period observed by them has been sixteen days; usually it is shorter.

Much of the mystery in the attempts at reduction of obesity is thus dispelled. The principle of the conservation of energy remains intact when the facts of the behavior of the obese are presented in quantitative fashion. The disproportions leading to obesity may be classified, according to the Michigan clinicians, into two categories. The first group includes various human weaknesses, such as overindulgence and ignorance. The second group is composed of conditions that cause a decrease in the requirement for energy, such as lessened activity or lowering of the basal metabolic rate for any reason. If the long established food habits do not respond to this lessened demand, obesity is inevitable. The fundamental feature of obesity remains a positive energy balance. On that basis it can be intelligently treated.

1. Newburgh, L. H., and Johnston, Margaret W.: Endogenous Obesity—A Misconception, J. Am. Dietet. A. 5: 275 (March) 1930.

METABOLISM DURING PROLONGED REST

For many years, physiologists were content to adopt the doctrine of the school of Voit and his followers with respect to the effect of muscular exercise on nitrogenous metabolism. This tended "to displace protein from the position of primacy to which it had been raised by Liebig." Until recently the dominant current view suggested that muscular work does not increase protein metabolism; furthermore, the character of the protein metabolism has been regarded as essentially unchanged by ordinary muscular activity. This is not intended to deny that under unusual conditions, when fat or carbohydrate are not readily available, protein may become the main source of energy in the body.

Cathcart [1] of Glasgow has challenged the older contentions. As he presents his claims:

> Let it be granted then that the main supply of energy is drawn from non-nitrogenous sources, still the substance of the muscle is rich in nitrogen. It would be ridiculous to argue as if muscle were a stable mechanical arrangement like a practically unwearable jeweled bearing. The fact that, if the conditions are not optimal, there is very soon unmistakable evidence of excessive wear and tear is definite proof of the delicate chemical balance which exists in muscle. The question must then necessarily be raised, Is there no evidence of an increased output of nitrogen as the result of muscle activity?

To this query Cathcart has made a positive reply. After reviewing the abundant experimental evidence he has reached the conclusion that there is abundant evidence in support of the view that muscle work leads to a definite though perhaps limited increase in the output of nitrogen, i. e. to increased catabolism of protein; and at the same time there is also good evidence that the same muscle activity leads to the laying down of protein, i. e., to the stimulation of the anabolic processes in the broadest sense of the term. In other words, the existent evidence points to a definitely enhanced metabolism of protein as the result of muscle activity.

Clinicians are often interested in the results of the reverse process; namely, enforced muscular inactivity or rest. The wastage or atrophy of muscles in disuse is a familiar picture. Disuse may be of varied sorts: voluntary rest; immobilization to correct deformities or promote healing of parts; or that due to destructive lesions of the lower motor neurons or their axons, or to toxic action, or to pressure. Cuthbertson [2] of the University of Glasgow has lately reported carefully conducted balance experiments on persons brought into nitrogen equilibrium in a preliminary fore period and then subjected to enforced inactivity of the lower limbs. Muscular rest of the order described causes an almost immediate but small rise in the output of urinary

1. Cathcart, E. P.: The Influence of Muscle Work on Protein Metabolism, Physiol. Rev. 5: 225 (April) 1925.
2. Cuthbertson, D. P.: The Influence of Prolonged Muscular Rest on Metabolism, Biochem. J. 23: 1328, 1929.

nitrogen. As the period of rest lengthens, it appears probable that the rate of increase is accelerated but that eventually it declines to a more steady level, depending on the degree of immobilization. Surveying the results obtained in work experiments with those just referred to, Cuthbertson concludes that when one alters the level of functional activity there is a lag period before nitrogen equilibrium is again obtained. During this period there is a loss of the essentially active substance, which persists until, in the case of increased muscle work, the anabolic response is equal and opposite to the increased catabolism, or even greater. In the case of decreased activity, it persists until the amount of functioning metabolic substance is reduced to such a level that the catabolism is equal and opposite to the diminished anabolism. Such a change does not appear to alter appreciably the endogenous metabolism as represented by uric acid and creatinine. The gaseous metabolism remains constant from day to day. Thus our knowledge of nonuse of the muscles and bones may match the current information on the effects of their use. A physiology of rest is desirable quite as well as a physiology of exercise.

RICKETS AND VITAMIN D

At present the pathogenesis of rickets seems to be fairly well defined; few of the advances in the science of nutrition have been made with as striking an outcome as has been the case with this disease. The relationship of the inorganic constituents of the diet, the specific effect of cod liver oil, the curative effect of natural and artificial ultraviolet rays, and the activation of ergosterol to antirachitic potency are mile posts along the road of progress in elucidating the etiology and biochemical relationships of rickets. The novelty of producing a therapeutic agent by photochemical means together with the tremendous potency of viosterol has led, perhaps, to an undue canonization of this material on the part of physicians. Without detracting in the least from its merited value in the treatment of rickets, certain recent observations raise a question as to the simplicity of the pathogenesis of rickets implied in the current facile use of viosterol.

Recently it has been pointed out [1] that, whereas both viosterol and cod liver oil are extremely efficacious in curing rickets, only the latter contains in addition the indispensable vitamin A. Although the most obvious function of calcium and phosphorus is in the building of bones, there are other demands for these mineral elements which, at times such as pregnancy and lactation, become of great importance. Brown and Shohl [2] have indicated clearly that, whereas vitamin D is concerned with the calcification of bones, the retention of calcium and phosphorus in the body is largely a function of the level of these materials in the diet, irrespective of the presence or absence of vitamin D. Indeed, these conclusions are fortified by the apparent futility of attempts to influence the utilization of calcium during lactation in various species by measures known to accelerate the healing of rickets.

If there exists a complacent belief among some investigators that rickets is due to a deficiency of vitamin D alone, there are others who do not accept such a simple relationship. In a recent study, De Sanctis and Craig [3] have compared the efficacy of cod liver oil and of viosterol as prophylactic antirachitic agents, using comparatively large groups of infants as subjects. Employing materials of proved potency and in liberal amounts they found that of 123 children given viosterol 29 per cent were not protected against rickets, while of 100 given cod liver oil 3 per cent showed rickets, although the former group received twice the number of units of vitamin D given the latter group. The children were all similar in age, in duration of time on the experiment, in dietary treatment and in rate of growth. Rather than to accept the obvious conclusion that the recommended dosage of viosterol is too small to prevent rickets, the authors are inclined to believe that the results indicate that other circumstances in addition to lack of vitamin D are responsible for the development of rickets.

On the basis of recent experiments on laboratory animals, Hess and his co-workers [4] have concluded that the level of inorganic phosphate in the blood is not as infallible a criterion of rickets as heretofore believed. By carefully adjusting the various components of the experimental ration together with vitamin D in the form of viosterol or cod liver oil, they have been able to increase the concentration of serum phosphate without at the same time inducing healing of the rachitic lesion. Likewise rickets was cured without raising the level of blood phosphate to the normal value. The fact that in these studies the cure of rickets was independent of the concentration of inorganic phosphate in the blood indicates that variation of this constituent "cannot be regarded as an essential or inherent feature in the pathogenesis of healing of this disorder." Furthermore, these investigators conclude that local disturbances in the epiphyses of the bone as well as chemical disturbances in the systemic blood play a part in the causation of rickets.

Modern medicine has been helped enormously by the sciences, and in no field has biochemistry rendered greater service than in connection with the deficiency diseases. The newer knowledge of the pathogenesis of rickets attests this fact. However, the innermost workings of the cell are yet to be plumbed; chemistry and physics have explained much in both experimental and practical medicine, but the *tactus eruditus* is still a jewel of great worth.

1. Vitamin D in Tuberculosis, editorial, J. A. M. A. **94**: 414 (Feb. 8) 1930.
2. Brown, Helen B., and Shohl, A. T.: Rickets in Rats, J. Biol. Chem. **86**: 245 (March) 1930.
3. De Sanctis, A. G., and Craig, J. D.: Comparative Value of Viosterol and Cod Liver Oil as Prophylactic Antirachitic Agents, J. A. M. A. **94**: 1285 (April 26) 1930.
4. Hess, A. F.; Weinstock, Mildred; Rivkin, Helen; and Gross, J.: J. Biol. Chem. **87**: 37 (May) 1930.

Current Comment

THE PRESIDENT-ELECT—E. STARR JUDD

The newly elected President of the American Medical Association, Dr. E. Starr Judd of Rochester, Minn., is widely known to the medical profession of America as a calm, sincere, practical and competent surgeon. He was born in Rochester, July 11, 1878. After preliminary general education he received his degree in medicine from the University of Minnesota School of Medicine in 1902. He served his internship in Saint Mary's Hospital in Rochester and thereafter became first assistant to Dr. Charles H. Mayo. Since that time he has progressed steadily in the work of the Mayo Clinic, heading one of the sections in the division of surgery. He has aided education in surgery, serving as professor in the Graduate School of the University of Minnesota. Dr. Judd has been constantly active in organizational work in county and state medical societies and has been president of the Minnesota State Medical Association. During the war he was a major in the Medical Officers' Reserve Corps and on active duty as director of a school of instruction in anesthesia and surgery, reaching finally the rank of lieutenant colonel. In many scientific medical organizations devoted particularly to surgery, including the Western Surgical Association, the American Surgical Association, the Society of Clinical Surgery and the American College of Surgeons, he has been a constant attendant and participant in the programs. From the time of his entrance into surgical practice, Dr. Judd has contributed extensively to the periodical literature of his subject, especially abdominal surgery. His fundamental investigations are recognized for their merit both in this county and abroad. His contributions have won for him the recognition of his colleagues as a competent leader in this field. By his election, the House of Delegates of the American Medical Association recognizes the importance of surgical science and establishes again its conviction of the necessity for realizing that the American Medical Association is above all a body of men devoted to the prevention of disease, its care and its treatment.

E. STARR JUDD, M.D.
PRESIDENT-ELECT OF THE AMERICAN MEDICAL ASSOCIATION

THE DETROIT SESSION

The multitude of provisions for instruction and entertainment at the Detroit session was perhaps the most striking feature of the annual session of the Association just held in that city. Some activity was scheduled for satisfactory use of every moment of the visitor's time, and it remained only for him to employ his time to his own best advantage. From the first two days, during which a series of extraordinary clinical lectures and talking motion pictures were available, to the last three days, in which the fifteen scientific sections provided more than three hundred manuscripts on various phases of medical progress, scientific discourse occupied the auditorium and the halls in the Masonic Temple. At the same time, the greatest number of scientific and technical exhibits ever assembled under the auspices of the Association held forth in every available space on several floors in the same building. For the evening the Michigan State Medical Society provided a past-presidents' dinner for the opening night, given exclusively for the officers and the House of Delegates; the opening meeting with the presentation of emblems to past-presidents took place on Tuesday night; numerous fraternity and other social entertainments were held on Wednesday; the President's reception on Thursday, and boat rides, motor bus trips and private tours were provided by the Local Committee on Arrangements for the intervening periods, if any. Obviously, complete utilization of such provisions placed a tax on the physical endurance of the convention guest, and a course of rest and physical training in anticipation of the session was almost necessary to enable the too enthusiastic conventionist to survive successfully the session's attractions. The meetings of the House of Delegates were marked primarily by the demonstration of confidence in the work of the Board of Trustees and by special interest in the economic problems affecting the progress of medicine today. Thus, resolutions concerning the care of veterans' legislation, federal aid on maternal welfare, mental hygiene and similar problems dominated the picture. It is significant that the resolution concerning aid for veterans adopted by the House of Delegates was specifically referred to by the President

of the United States in his message vetoing the veterans' bill. The attendance of more than five thousand physicians in a time of financial stress indicates the manner in which the medical profession accepts the importance of this annual session. The appreciation of all of those who attended must be tendered to the Local Committee on Arrangements, which contributed freely of its funds, its time and its efforts to build the success of the meeting. The hospitality shown has established the profession of Detroit in the affections of the Fellows of the American Medical Association.

PERFUMES AND PIGMENTATION

The use of cosmetics and perfumes has grown to enormous proportions in recent years. The fad is no longer confined exclusively to women. The male of the human species has begun to exhibit occasional indulgence in cutaneous applications that were once frowned on as unmasculine. The physician is only secondarily concerned with the social proprieties, the personal pecularities or the possible implications of these growing customs. Lotions and perfumery play a part in present-day life among a sufficient number of persons to raise the question of the physiologic wisdom of the practice. Dermatologists may not agree as to the desirability of the repeated applications of alcoholic solutions, such as most lotions are, to the skin; they may differ with respect to the use of various types of greases more elegantly designated as cosmetics or skin creams. All admit, however, that idiosyncrasies occur which express themselves in various types of dermatitis. A remarkable pigmentation of the skin, originally described by Freund [1] in 1916 and later named berlock dermatitis by Rosenthal,[2] has been subjected to renewed observation in this country by Gross and Robinson [3] at Columbia University College of Physicians and Surgeons. The condition results from the application of toilet waters to the skin immediately before it is exposed to the sunlight. Eau de cologne and also oil of bergamot, which is one of the essential oils used in toilet waters, have been found to have photosensitizing properties. The dermatitis that can be induced by artificial ultraviolet irradiation as well as by sunlight after applications of perfumes to the skin is usually found on the neck and chest, and appears as dark red areas changing to brown slightly mottled with red. The shape of such an area is usually similar to that of an area covered by a small drop of flowing fluid, and it generally appears during the summer. The New York dermatologists raise the question whether one is dealing with a personal susceptibility or with several factors, such as climate, perspiration, brand of perfume and short intervals between application of inciting cause and exposures to sunlight. In view of the fact that perfumes and toilet waters are so widely used and that sunbaths have become so popular, they are inclined to think that there must be some predisposing factor. The number of cases seen and the number of people under the conditions seeming to cause this dermatitis are not in proportion. In any event, the lovers of sunshine and the patrons of alpine rays may do well to bear in mind that in some persons the daub of the perfume bottle stopper may bring about leopard spots where they were not expected.

1. Freund: Dermat. Wchnschr. **63**: 931, 1916.
2. Rosenthal, F.: Zentralbl. f. Haut- u. Geschlechtskr. **13**: 322, 1924.
3. Gross, P., and Robinson, L. B.: Berlock Dermatitis, Arch. Dermat. & Syph. **21**: 637 (April) 1930.

TRICHINOSIS IN CALIFORNIA

THE JOURNAL [1] has previously directed attention to the decidedly increased morbidity of trichinosis in California. The number of cases reported at that time was 84. Cases, however, continue to be reported until they now number 151 with 9 deaths. That some epidemiologic factor is active appears to be definitely proved since the yearly number of cases reported in 1928 and 1929 were 29 and 33, respectively. In fact, the *Bulletin of the California State Department of Public Health*, April 19, makes this significant statement: "The past five months have brought to California a larger number of cases of trichiniasis than have ever occurred within the state during a like period of time." The consumption of salami accounted for 45 cases alone out of 132 cases reported. It is interesting to note that smoked bear meat caused 4 cases. As would be expected, many persons were made ill from home-killed and home-prepared pork products. Commercial products, however, were far from being exempt since cases were attributed to the consumption of these in Alameda, Sacramento and San Francisco counties. The situation, apparently, demands that every effort be exerted by health officials to ascertain the source of the infected food; to use all known safeguards of preparation of pork and its products, and to disseminate widely the knowledge that thorough cooking in the home will kill the parasite. Moreover, microscopic examination of hogs and rats in various centralized areas should be pushed in an endeavor to discover possible endemic foci.

1. An Outbreak of Trichinosis, Current Comment, J. A. M. A. **94**: 562 (Feb. 22) 1930.

Association News

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts at 10 o'clock, daylight saving time, on Monday, Tuesday, Thursday and Saturday, over Station WBBM (770 kilocycles or 389.4 meters).

The program for the week of July 7-12 is as follows:

July 7. The Problem of the Epileptic.
July 8. Reducing is All the Rage.
July 10. Measuring Human Energy.
July 12. My Son Goes to Kindergarten.

Five Minute Talks may be heard over the Columbia Broadcasting System daily from 1 to 1:05, daylight saving time.

The program for the week is as follows:

July 7. How to Develop a Healthy Mind.
July 8. Living Outdoors.
July 9. A Daily Chart for the Runabout.
July 10. Sick Headaches.
July 11. Gaining the Child's Confidence.
July 12. What is Pellagra?

PROCEEDINGS OF THE DETROIT SESSION

MINUTES OF THE EIGHTY-FIRST ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, HELD AT DETROIT, MICHIGAN, JUNE 23-27, 1930

(Continued from page 2074)

Second Meeting—Tuesday Morning, June 24

The House of Delegates was called to order at 9:30 a. m. by the Speaker, Dr. F. C. Warnshuis.

The Speaker announced that, if there was no objection, the signed attendance slips of the individual delegates would constitute the roll call of the House.

It was moved by Dr. J. N. Vander Veer, New York, seconded by Dr. Sol. G. Kahn, Utah, and carried, that the House dispense with the reading of the minutes.

Supplementary Report of the Reference Committee on Credentials

Dr. J. D. Brook, chairman, reported that 148 delegates had filed satisfactory credentials. On motions duly seconded and carried, Drs. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, J. Q. Graves, Louisiana, W. F. Draper, U. S. Public Health Service, Charles B. Wright, Minnesota, James T. Case, Section on Radiology, and E. S. Edgerton, Kansas, who had been properly certified as delegates but had lost their credentials, were seated.

Report of Reference Committee on Rules and Order of Business

Dr. David Ross, chairman, presented the following report:

On the resolution offered by Dr. E. C. Thrash, Georgia, the committee recommends that it be not adopted as the intent of the resolution is already covered by a rule of the House of Delegates.

Respectfully submitted.

DAVID ROSS, Indiana, Chairman.
W. H. SEEMANN.
B. L. BRYANT.
E. A. HINES.

On motion of Dr. Ross, seconded by Dr. J. W. Burns, Texas, the report was adopted, after discussion by Dr. Southgate Leigh, Virginia.

Dr. Mather Pfeiffenberger, Illinois, suggested that the Secretary read each one of the reports.

Report of the Reference Committee on Medical Education

Dr. Irvin Abell, chairman, presented the following report:

Your committee recommends for adoption that part of the resolution presented June 23 by Dr. E. P. Sloan, Illinois, reading as follows:

Resolved, That this House of Delegates of the American Medical Association do herewith approve and commend the good work being done by the Council on Medical Education and Hospitals, and be it further

Resolved, That the Council on Medical Education and Hospitals of the American Medical Association be urged to continue this important work, and increase its activities along this line until the American Medical Association is generally recognized as the proper organization in this country to standardize hospitals.

Your committee has reviewed with care the report of the Council on Medical Education and Hospitals and has noted with interest the contained résumé of the activities of the Council during the twenty-five years of its existence. It is especially pleasing to note that the Council had opportunity during its twenty-fifth year to grant class A rating to a school of medicine which will open Oct. 1, 1930, with school building and hospital equipment accommodating 300 medical students and 200 patients provided after an expenditure of four million dollars. Record is made also of a medical library of 20,000 volumes and approximately 300 medical journals installed and subscribed for by this particularly fortunate educational institution. We mention this recent experience of the Council on account of the marked contrast to its earlier experiences in assisting the struggles of other institutions in order that they might achieve class A rating.

We recommend to this House of Delegates and the constituent associations represented recognition of the extent and the complexity of the work of the Council in their control over medical schools, hospitals, clinical and radiologic laboratories. We note the Council's reference to its lack of legal authority over any institution but would emphasize the fact that its moral authority may not be denied since this council represents 90 per cent of the active practitioners of medicine in the United States.

We were especially interested in the reference to the preceptorial assignments by various medical schools of their senior students and believe that a report of the reactions of students, preceptors and medical schools to this practice would be of interest to the next House of Delegates.

We believe also that the material accumulating in the files of the Council relative to so-called advertising of hospitals will be of future interest.

We submit that the work done by the Council on Medical Education and Hospitals since its creation in 1904 has been remarkably constructive and is in large measure responsible for the high standards, ideals and character which today are dominant in American medicine: and further that its accomplishments in the past may be taken as an index of its further attainments in the investigations now under way.

Respectfully submitted.

IRVIN ABELL, Chairman.
WALTER F. DONALDSON.
HOLMAN TAYLOR.
ISAAC A. ABT.

On motions of Dr. Abell, duly seconded and carried, the report was adopted section by section and as a whole, after discussion by Dr. Donald Macrae, Jr., Iowa, and Dr. Olin West, Secretary.

Report of Reference Committee on Sections and Section Work

Dr. H. A. Royster, chairman, presented the following report:

The Committee on Sections and Section Work begs leave to submit the following report:

1. We endorse the arrangements of sections as outlined in the report of the Council on Scientific Assembly.

2. We approve the action of the Council on Scientific Assembly in substituting clinical lectures for diagnostic clinics and in changing the hours.

Respectfully submitted.

H. A. ROYSTER, Chairman.
J. F. SMITH.
J. R. BLOSS.
SOUTHGATE LEIGH.

Dr. Royster moved that the report be adopted. The motion was seconded by Dr. David Ross, Indiana, and carried.

Report of Reference Committee on Hygiene and Public Health

Dr. W. F. Draper, chairman, presented the following report:

The Committee on Hygiene and Public Health reports favorably on the resolution presented by Dr. J. D. Brook, Michigan,

designed to reduce the hazard from small attachments to children's toys which may become detached and then aspirated into the lungs, and recommends the adoption of this resolution.

Respectfully submitted.

W. F. DRAPER, Chairman.
C. W. WAGGONER.
C. E. HUMISTON.
W. R. STEINER.
ALBERT SOILAND.

On motion of Dr. Draper, seconded by Dr. Mather Pfeiffenberger, Illinois, the report was adopted.

Report of Reference Committee on Reports of Board of Trustees and Secretary

Dr. Grant C. Madill, chairman, presented the following report:

THE SECRETARY'S REPORT

We endorse the sentiment expressed in the report of our secretary in which he recommends a more active and aggresive program on the part of component medical societies, stressing the necessity for unified action on the part of the medical profession as being essential in maintaining leadership in all questions pertaining to health matters. Also, the importance of establishing and maintaining the hearty cooperation of both the state and the county organizations through the agency of their respective public relation committees.

We recognize the changing method in medical practice; however, we earnestly urge a realization of the necessity of maintaining the personal relationship between physician and patient, and oppose any attempt on the part of any well meaning but misinformed and misguided individuals or organizations in their efforts to apply "mass production" methods to the practice of medicine.

We approve that portion of the report advocating the education of the public in all matters pertaining to health and disease.

We concur with the idea expressed that the medical profession has been too reticent and conservative in taking a position of active leadership in health activities, particularly with reference to the education of the public along these lines.

We believe that it would be a decided aid to organized medicine if the members of the House of Delegates would avail themselves of the opportunity of attending the annual conference of the state secretaries.

We congratulate the Association on the manner in which its affairs have been conducted the past year by its able and efficient manager and secretary, Olin West.

REPORT OF BOARD OF TRUSTEES

We heartily commend the Board of Trustees for the financial showing made, as exemplified by the auditor's report for the past year. A review of the report emphasizes the wisdom of the action of the house in authorizing the increase in the subscription price of THE JOURNAL to meet the demands of the increased Association activities.

We are gratified by the position of THE JOURNAL as the leader of medical publications, as well as the special journals in their respective fields.

We believe that HYGEIA has a place in every physician's waiting room and the attention of Fellows should be called to this fact.

We emphasize the value of the library and commend its more general use.

We endorse the work of the various councils for the past year as detailed in this report.

We especially commend the work of the Bureau of Legal Medicine and Legislation with reference to national legislation in connection with the narcotic bill and the Sheppard-Towner Maternity and Infancy Act.

We approve of that part of the report with reference to the World War Veteran's Act wherein attention is called to the viciousness of this proposed legislation, and we recommend that this House of Delegates go on record as being opposed to the federal government giving all medical and surgical care to veterans suffering from injury or disease that is not service connected.

We recommend the methods employed by the Bureau of Legal Medicine and Legislation and urge close cooperation of the various state legislative committees with this bureau.

We approve of the educational campaign that has been inaugurated by the Bureau of Health and Public Instruction and recommend a continuation of the cooperative policy with the National Educational Association and National Congress of Parents and Teachers.

The value and importance of the Annual Scientific Exhibit cannot be overestimated, and we recommend that it be continued and expanded from year to year.

The Trustees' report as a whole reflects decided progress in the Association's affairs. Your committee desires to express its realization of the immense amount of work entailed and its appreciation of their worth-while labors in connection therewith.

Respectfully submitted.

GRANT C. MADILL, Chairman.
R. W. FOUTS.
EPHRAIM R. MULFORD.
J. NORMAN HENRY.
J. W. VAN DERSLICE.

On motion of Dr. Madill, duly seconded and carried, the report was adopted section by section and as a whole, after discussion by Drs. Donald Macrae, Jr., Iowa, C. P. Kindleberger, United States Navy, and Dr. Holman Taylor, Texas.

Dr. Donald Macrae, Jr., Iowa, moved that a letter signed by the Secretary and the Speaker be sent to the American Legion headquarters in Indianapolis and also to the American Legion auxiliary headquarters, presenting the matters discussed. The motion was seconded by Dr. A. A. Ross, Texas, and adopted, after discussion by Drs. Olin West, Secretary, G. Henry Mundt, Illinois, H. H. Shoulders, Tennessee, D. E. Sullivan, New Hampshire, B. F. Bailey, Nebraska, Donald Macrae, Jr., Iowa, and Walter F. Donaldson, Pennsylvania.

Address of Dr. Hubert Work

The Speaker introduced Dr. Hubert Work, first Speaker of the House of Delegates, who said:

Mr. Speaker, Members of the House of Delegates, and Fellow Members of the American Medical Association, including Past Presidents:

I assure you it is a great pleasure, after an absence of ten years, to stand before you and look you in the face. I have no message to bring you. I am pleased to see you, pleased to hear this discussion, pleased to note the enthusiasm, and I am sure that the House of Delegates has been left in more able hands than it was in when I occupied this Chair.

Temporary Reader

Dr. Mather Pfeiffenberger, Illinois, moved that the Speaker appoint a temporary reader for this session to read the reports. The motion was seconded by Dr. T. O. Freeman, Illinois, and carried.

The Speaker appointed Dr. G. Henry Mundt, Illinois, temporary reader.

Report of Reference Committee on Amendments to the Constitution and By-Laws

Dr. E. C. Thrash, chairman, presented the following report:

The Judicial Council recommends that our By-Laws be changed in reference to the induction of fellows into the American Medical Association, which will require that Chapter XI, section 2, have the following paragraph added:

Any member of this association holding a degree equal in requirement to that of M.D. granted by a school of medicine recognized by the American Medical Association entitling the holder to apply to a state board of medical examination and registration for license to practice medicine, and who on the prescribed form shall apply for fellowship and subscribe for THE JOURNAL, paying the annual fellowship dues for the current year, shall be inducted into the Association as a Fellow, unless the application is disapproved by the Judicial Council.

Pursuant to the resolution introduced by Dr. Harris of California, recommending that a new council be made to function for the American Medical Association which shall

be called "Council on Medical Economics" and which resolution carries a recommendation for a change in the By-Laws, we recommend that, should the House of Delegates adopt this resolution, the By-Laws be revised as follows:

Amend chapter VII, COMMITTEES, section 3, by adding after "(*c*) Council on Scientific Assembly" "(*d*) Council on Medical Economics."

Amend chapter VIII, ORGANIZATION OF STANDING COMMITTEES OR COUNCILS, section 1, by adding the words "The Council on Medical Economics shall consist of ——— members each elected for ——— years" after the sentence "The Council on Medical Education and Hospitals shall consist of seven members, each elected for seven years."

Amend chapter VIII, Sec. 2, OFFICERS, by adding after "The Board of Trustees shall elect annually, to serve one year, a secretary of the Council on Medical Education and Hospitals," the words "and a secretary of the Council on Medical Economics, and shall fix their salaries."

Amend chapter IX, DUTIES OF STANDING COMMITTEES OR COUNCILS, by the addition of a section 4 to read: "SECTION 4. COUNCIL ON MEDICAL ECONOMICS. The functions of the Council on Medical Economics shall be: (1) To investigate conditions of medical economics and to suggest means and methods by which the same may be improved. (2) To endeavor to further the realization of such suggestions as may be approved by the House of Delegates."

That portion of the report dealing with the amendment to chapter XI, section 2, in reference to the induction of fellows into the American Medical Association was held over for the next meeting of the House.

The remainder of the report, dealing with amendments to chapter VII, section 3, chapter VIII, sections 1 and 2, and chapter IX, by the addition of section 4, providing for a Council on Medical Economics, was referred back to the committee until the House should receive the report of the Reference Committee on Reports of Officers, after discussion by Drs. Wendell Phillips, Past President, Henry C. Macatee, District of Columbia, and E. C. Thrash, Georgia.

Report of the Board of Trustees

Dr. Edward B. Heckel, chairman, presented the following report:

SUPPLEMENTARY REPORT OF BOARD

1. *Saving of Tax on Earned Income.*—At the Portland session the Board of Trustees reported that it had authorized the employment of counsel to represent the interests of the medical profession in the adjustment of complaints that had been received against the method used by some collectors of internal revenue in computing the earned incomes of physicians who employ professional assistants. The matter had come to an issue in the Arnett-Crockett Clinic at Lafayette, Ind. At the request of Drs. Arnett and Crockett, counsel for the American Medical Association cooperated with counsel employed by them. The matter has been settled in a manner that should be entirely acceptable to the medical profession.

It had been held that professional fees, to constitute earned income, must be received as compensation for personal services rendered by the individual taxpayer. On the basis of that ruling, physicians rendering personal services, but employing professional assistants, had in some instances been denied the right to include as earned income all their professional fees up to the statutory limit of $30,000. It was held that the payments received for services to patients who came in part under the personal observation of the principal physician and in part under the personal observation of one or more of his assistants did not in their entirety constitute income earned by the principal. The earned income of the principal in any such case, it was held, was the difference between the amount received by him from the patient and the amount paid by him to his assistant for the assistant's services in treating the patient.

As the result of the Arnett-Crockett case, the Commissioner of Internal Revenue has issued instructions for the guidance of the collectors of internal revenue as follows:

It was not intended to deny the taxpayer the right to consider the entire amount received as professional fees as earned income if the taxpayer is engaged in a professional occupation such as a doctor or a lawyer, even though the taxpayer employs assistants who perform part or all of the services, provided the client or patient is that of the taxpayer and looks to the taxpayer as the responsible person in connection with the services performed.

This ruling will also apply to income received as professional fees from a professional partnership even though the partnership employs assistants who work on a salary basis provided the clients or patients are that of some active member of the partnership and look to some active member of the partnership as responsible for the services performed.

The cooperation of the American Medical Association in this case rendered it possible to procure not merely a decision in the particular case submitted on appeal to the Commissioner of Internal Revenue but also a ruling by the commissioner broad enough to cover physicians generally and the promulgation of that ruling in such a way as to avoid similar difficulties arising in the future and to facilitate the procuring of refunds by physicians who through the mistaken interpretation of the law have been called on to pay income taxes in excess of the amount due. In the Arnett-Crockett case the taxpayers will receive, by virtue of this ruling, refunds for two years, with interest, amounting to approximately $700, and they, in common with all other taxpayers similarly situated, will save considerable amounts every year in the future, because of the corrected method of computation. It is obvious that the money saved to the medical profession—and incidentally to all other professions in which professional assistants are employed—will be considerable.

2. *Changes in Tariff of Interest to Physicians.*—Under the recently enacted tariff bill, duties have been increased on a considerable number of articles necessary for the diagnosis and treatment of disease constantly used by physicians and hospitals. Against the overwhelming tendency for increases in duties it was almost impossible to make any headway, but on the item of the greatest interest to the medical profession, surgical instruments, the increase was held down to a point far below that demanded by American manufacturers of surgical instruments. All of the duties stated below are ad valorem duties. Under the tariff act of 1922, the duty on surgical instruments was 45 per cent. American manufacturers of surgical instruments urged that the new bill impose a duty of 75 per cent plus varying specific duties based on the cost of each article. The act just signed by the President rejects all proposed specific duties and provides that the duty on surgical instruments, including hypodermic needles, hypodermic syringes and forceps, composed wholly of metal, shall be 55 per cent unless in chief value of glass, in which case the rate shall be 70 per cent. The tariff on pharmaceutic and surgical articles and utensils of all kinds used in hospitals, laboratories and colleges and universities, wholly or in chief value of glass, except bottles, vials, etc., is increased from 65 per cent to 85 per cent. The tariff on optical glass or glass used in the manufacture of lenses or prisms for spectacles or for optical instruments or equipment is increased from 45 per cent to 50 per cent. On hemocytometers, ophthalmoscopes, corneal microscopes, testing or recording instruments for ophthalmologic purposes and frames and mountings, the tariff is increased from 45 per cent to 60 per cent. The tariff on electrotherapeutic and x-ray apparatus and instruments is increased from 30 per cent to 35 per cent. It will be regretted if the increased duty paid by importers at ports of entry will be made the excuse for increases in retail prices far greater than the increase in the duty and will in the end be reflected in the cost of medical, surgical and hospital care.

3. *The Work of the Committee on Foods.*—The work of the Committee on Foods, a special committee of the Council on Pharmacy and Chemistry, has developed in a remarkable manner. The response of manufacturers of food products in submitting these products for the consideration of the committee has been greater by far than was anticipated, and many of those who have submitted products have been quick to acquiesce in the findings and rulings of the committee. This work has developed so fast and to such an extent that it has become necessary to employ an executive officer to administer the affairs of this committee. The members of the Committee on Foods are: E. M. Bailey, New Haven, Conn.; Eugene F. DuBois, New York; Julius H. Hess, Chicago; W. McKim Marriott, St. Louis; L. B. Mendel, New Haven,

Conn.; G. F. Powers, New Haven, Conn.; H. C. Sherman, New York; Morris Fishbein, chairman, Chicago.

4. *Field Work.*—The meetings of state medical associations and other societies attended by members of the administrative personnel and by officers of the Association in 1929 were far greater in number than in any previous year. Similarly, the number of meetings of independent scientific organizations and lay groups before which official representatives of the Association appeared was greater in the past year than in any other year.

5. *Dissemination of Printed Material.*—It is probable that few members of the Association or, for that matter, few members of the House of Delegates itself appreciate the amount of printed material that is distributed from the presses of the Association each year. Approximately 3,000 tons of printed matter went out in 1929.

The Board of Trustees urges the members of the House of Delegates and all members of the Association to call at the Association building in Chicago whenever opportunity offers and to visit the various departments in order that they may become more familiar with the character and the scope of the work that is being done.

6. *Committee on Toxic Gases.*—The Board of Trustees commends the work of this committee, which was established in accordance with a resolution adopted at the Portland session, and recommends its continuance. The Committee has been actively at work during the current year and has already published reports on the hazardous effects of carbon monoxide and on poisonous gases used in refrigeration.

ACTION OF BOARD ON MATTERS REFERRED TO IT

7. *Resolution on Entertainment at Annual Sessions.*—Relative to the resolution concerning entertainment at annual sessions, the Board recommends the adoption of the resolution, with the elimination of the final sentence, so that it will read:

WHEREAS, A precedent exists that makes it incumbent on the local profession of the city where the annual session of the American Medical Association is held to provide for a series of so-called entertainment functions, and

WHEREAS, Such entertainment appeals to but a small number of the visiting Fellows and members, and

WHEREAS, A larger percentage of Fellows and members attending annual sessions prefer to elect the nature, time and place of the entertainment they wish to enjoy, and

WHEREAS, The providing of formal entertainment places on the local profession a financial burden running into thousands of dollars and is becoming more and more a feature of embarrassment, therefore be it

Resolved, That this House of Delegates declare that the precedent governing entertainment functions is hereby and now terminated, and be it

Resolved, That at future annual sessions the only formal entertainment sponsored by this association shall be the President's Annual Reception, the expense of which shall be borne by this Association, and be it

Resolved, That the only obligation that shall rest on the local profession of any city in which this association holds its annual session shall be to render such assistance through proper committees or individuals as will enable the Trustees and other officers to provide suitable hotel accommodations, meeting places, exhibit space and local information.

8. *Resolution on Motion Pictures.*—The Board of Trustees recommends the adoption of the resolution.

RESOLUTIONS AND RECOMMENDATIONS OFFERED BY THE BOARD

9. *Resolution on Federal Aid for Maternal Welfare.*—The Board of Trustees offers the following resolution:

WHEREAS, The American Medical Association is in entire sympathy with the cooperative efforts of federal and state agencies to establish and develop official local health organizations for the conduct of those activities which are generally recognized as the proper functions of such health departments; and

WHEREAS, The usurpation of any public health function by any lay bureau of the federal government, which, through allotments of federal subsidies for special health services, seeks to duplicate and administer duties and functions already placed by law on the United States Public Health Service; and

WHEREAS, The United States Public Health Service has in the past efficiently discharged its duties with respect to such matters and now, through recent reorganization, has been provided with enlarged facilities for carrying on such work; and

WHEREAS, An effort is now being made to revive and perpetuate the federal subsidy system established under the defunct Sheppard-Towner Maternity and Infancy Act, which authorized the payment of state subsidies, over a fixed period of years, on an arbitrary and irrational basis of population, without reference to the ascertained sanitary and health needs of the several states or to their ability to meet their own needs; and

WHEREAS, The payment of such subsidies was made dependent on the surrender by the legislatures of the several states, to the federal government, of the right to supervise and control state activities in the selected field of public health; and

WHEREAS, This system after seven years' trial under the administration of a lay bureau effected no improvement in the field of public health in which it was operative, notwithstanding the expenditure of more than 11 million dollars of federal and state money; and

WHEREAS, In the judgment of the House of Delegates of the American Medical Association, any such system tends to destroy local initiative and sense of responsibility and to pay federal funds for purposes named by the federal government to states not in need of federal aid; be it

Resolved, That the House of Delegates of the American Medical Association condemns as unsound in policy, wasteful and extravagant, unproductive of results and tending to promote communism, the federal subsidy system established by the Sheppard-Towner Maternity and Infancy Act and protests against the revival of that system in any form;

Resolved, That it is the sense of the House of Delegates that each state should be left free to formulate its own health programs, with the cooperation of the United States Public Health Service if desired by the state, free from any inducement or compulsion in the way of federal reward or coercion;

Resolved, That any legislation involving cooperation between the federal government and the several states in the field of public health must, in the interest of efficiency and economy, in the judgment of the House of Delegates, be administered under the joint supervision and control of the United States Public Health Service and the state health authorities; and be it further

Resolved, That copies of these resolutions be sent immediately to the President of the United States and to every Senator and Representative in Congress.

10. *Resolution on Care of Veterans.*—The Board of Trustees offers the following resolution:

Resolved, That, in the opinion of the House of Delegates of the American Medical Association, legislation to extend in point of time the presumption of service origin of diseases and injuries from which veterans are suffering, to establish arbitrarily the service origin of such diseases and injuries, and to extend greatly the category of such diseases, is without sound basis in the science and art of medicine;

Resolved, That the provisions of such legislation to the effect that lay evidence as to the nature and extent of diseases and injuries is to be given added consideration will give to such evidence weight to which it is in no way entitled and cause pressure on the Veterans' Bureau to allow claims for compensation without adequate medical support;

Resolved, That legislation recently enacted providing for the enlargement of the hospital facilities at the command of the Veterans' Bureau for the care of veterans, rich and poor, who desire hospitalization and treatment for diseases and injuries that admittedly have no relation whatever to military service is unsound and communistic in character, and the pending proposal to allow such veterans as are of financially limited means bonuses and money to add to their own comforts while they are in the hospital and to help support their families during that period and for limited periods thereafter is calculated to induce patients to seek hospital care through the Veterans' Bureau when such patients should be better and more economically treated as ambulant patients or treated in their own homes;

Resolved, That the duty of providing medical and hospital care and financial relief for indigent citizens of any state, when disabled by diseases and injuries that did not originate in the line of military duty, is a function not of the federal government, but of the governments of the several states and should be discharged through state agencies, including permanently established state, county, municipal and private hospitals; and

Resolved, Further, that a copy of these resolutions be sent to the President of the United States.

11. *Official Color of Ribbon for Emblems.*—The Board of Trustees recommends the adoption by the House of Delegates of the academic green as the official color for all ribbon on emblems used by the American Medical Association.

The supplementary report (sections 1 to 6 inclusive) was referred to the Reference Committee on Reports of Board of Trustees and Secretary.

The seventh section of the report was adopted on motion of Dr. J. W. Van Derslice, Illinois, seconded by Dr. H. A. Royster, North Carolina.

The eighth section of the report was adopted on motion of Dr. H. A. Royster, North Carolina, seconded by Dr. David Ross, Indiana.

The resolution on federal aid for maternal welfare was referred to the Reference Committee on Legislation and Public Relations.

The resolution on care of veterans was referred to the Reference Committee on Legislation and Public Relations.

The eleventh section of the report was adopted on motion of Dr. Charles J. Whalen, Illinois, seconded by Dr. William H. Mayer, Pennsylvania.

Report of Reference Committee on Reports of Officers

Dr. N. B. Van Etten, for Dr. E. J. Goodwin, chairman, presented the following report:

1. *Support of Committee on Cost of Medical Care.*—The President's plea for a more general and whole-hearted support by the medical profession of the work of the Committee on the Cost of Medical Care is endorsed. Your reference committee feels that inasmuch as Dr. West, Secretary of the American Medical Association, Dr. Wilbur, chairman of our Council on Medical Education and Hospitals, and a number of private practitioners, endorsed by this association, are members of the committee, the interests of the individual practitioner will be conserved in the final analysis to be offered by the committee.

2. *Bureau of Medical Economics.*—The President's suggestion that the Board of Trustees create a Bureau of Medical Economics was considered jointly with the resolutions from the California Medical Association asking for the formation of a Council on Medical Economics. Your reference committee has unanimously approved the principle involved in this recommendation of President Harris, as well as in the resolutions of the California Medical Association, and recommends this principle to the House of Delegates for adoption.

Specifically, your reference committee recommends further that the Board of Trustees put the principle endorsed above into effect by the creation of a Bureau of Medical Economics to function under the direction of the said Board.

3. *Midyear Meeting of House of Delegates.*—Your reference committee believes that the existing provisions of the Constitution and By-Laws for special called meetings of the House of Delegates when required by any exigency render the desirability of a regular midyear meeting doubtful.

4. *Relations of Physicians to Hospitals.*—Your reference committee compliments the President-Elect on his lucid, logical and comprehensive exposition of the question of the relationship of the physician to the hospital, and, after a careful consideration of the conclusions enunciated, the committee feels that it should incorporate them in this report. They are as follows:

(*a*) The physician is no more obligated to provide for the care of the indigent sick than his fellow citizen.

(*b*) In mutual charitable undertakings for the care of the sick, each citizen contributes what he has; the laymen, physical necessities; the physician, professional skill. But each has a right to protect himself from exploitation, and to judge of the merit of the recipients of his bounty.

(*c*) When a hospital offers its facilities to a mixed clientele, pay, part pay and pauper, the distinction between the sources of those facilities should be clearly recognized. The physical equipment and service is of general public origin, and their uses may be sold or given away in the discretion of lay boards; but the professional facilities are, and always must be, the contribution of the medical staff as individuals and cannot become in any sense the property of the institution.

(*d*) When a hospital is owned and operated by government, and supported by taxation, to which the medical profession contributes its due proportion, medical attendance should be paid for by taxation, along with all the other facilities supplied by the institution.

(*e*) No hospital instituted and supported by public philanthropy or community cooperation of any kind should be permitted to increase its revenues, and so reduce its financial burden on the public, by any system of collecting fees for medical attendance, and thus engaging in the corporate practice of medicine.

(*f*) The membership of the Association should be guided by these principles in accepting posts on the staff of hospitals and should refuse to support by the contribution of their services, or by the references of their patients, any institution violating them.

Your reference committee recommends that this address be referred to the Board of Trustees, with the request that the Board study the possibility of adopting these six basic points as the basis of a campaign for the reeducation of both the lay public and the medical profession on the changed relation of the hospital to the physician.

Your reference committee further recommends that the entire address be printed in the first available issue of the AMERICAN MEDICAL ASSOCIATION BULLETIN so that every member of the organization may have an opportunity to read it.

5. *Executive Session.*—The Speaker has painted a vivid picture of the wide variety of problems annually thrust on us for solution. Your reference committee believes it is evident to every delegate that the Speaker's reasons for suggesting an executive session are convincing. The committee, therefore, recommends that the House of Delegates resolve itself into executive session at 2 p. m. on Tuesday of each annual meeting for the consideration of reports or problems referred to that session. The committee recommends, further, that this provision be added to the order of business.

6. *Reading Clerk.*—You reference committee believes that a reading clerk would expedite the transaction of the business of the House and that the delegates would be better informed of the text of addresses and reports delivered before the House. Your reference committee therefore recommends that the position of Reading Clerk be created and that the Speaker shall make the appointment; provided that, if any officer, delegate or committeeman desires to deliver his address in person, he shall be accorded that privilege.

The committee commends the Speaker on his able administration of the duties of his office and the impartial manner in which he has fulfilled every obligation.

Respectfully submitted.

E. J. GOODWIN, Chairman.
H. H. SHOULDERS.
HENRY C. MACATEE.
N. B. VAN ETTEN.
J. B. HARRIS.

On motions duly seconded and carried, the report was adopted section by section and as a whole, after discussion by Drs. Wendell Phillips, Past President; Holman Taylor, Texas; Arthur T. McCormack, Kentucky; J. W. Van Derslice, Illinois; Edward B. Heckel, Board of Trustees; Southgate Leigh, Virginia.

Report of Reference Committee on Legislation and Public Relations

Dr. Charles J. Whalen, chairman, presented the following report:

1. *Committee on Legislative Activities.*—The committee heartily approves of the resolution introduced by Dr. C. B. Wright, Minnesota, namely:

WHEREAS, Problems are constantly arising before Congress which seriously affect the interests of public health and the medical profession, and

WHEREAS, Full information concerning these problems is not always available, and

WHEREAS, Our present method of presenting this information should be supported by a group of medical men well informed on legislative activities, be it

Resolved, That the Board of Trustees appoint annually a committee of five representing various sections of the country, the personnel of said committee to be composed of men who have had experience on state legislative committees, that said committee is to study these problems and to cooperate with the Bureau of Legal Medicine and make such recommendations as they consider necessary to the House of Delegates, and in the interim to the Board of Trustees.

2. *Cooperative Diagnostic Laboratories.*—The committee condemns the growing tendency of members of the medical profession becoming participating members of diagnostic laboratories owned and controlled and supervised by laymen, from which laboratories the medical participating members receive compensation based on the amount of work that the participating medical members refer to these cooperative diagnostic laboratories, and we highly approve of that report of the Judicial Council condemning such practices, under the title "Cooperative Diagnostic Laboratories."

3. *Original Jurisdiction and Responsibility.*—We heartily approve of the section in the report of the Judicial Council entitled "Original Jurisdiction and Responsibility."

4. *Proper Preparation of Charges and Appeals.*—We heartily approve of the general purport of this section of the report of the Judicial Council. We suggest that the following sentence be inserted after the word "followed" in the third from the last line of the last paragraph:

The technicalities of evidence as prevailed in courts of law whether they be civil or criminal courts should not be insisted upon.

The paragraph will read as follows:

It is, at best, unfortunate that official action contemplating the application of discipline should have to be taken, but it is essential that the honor of the profession be zealously guarded and that the integrity of our organization be fully preserved. It is just as important that no injustice be done to any individual. That these ends be served, it is of the utmost importance that any society that finds it necessary to proceed against any member or any group of members shall see to it that charges preferred are specific, that rules of evidence are duly observed, and that legal methods of procedure are carefully followed, but that the technicalities of evidence as prevailed in courts of law whether they be civil or criminal courts should not be insisted upon. Appeals must be made in the prescribed form, and the records submitted to appellate bodies must be accurate and complete.

5. *Corporation Practice.*—We approve of that part of the report of the Judicial Council entitled "Corporation Practice," but we would call attention to the fact that the profession at large demands a solution of this question and would suggest that the Judicial Council report at the next meeting of the House of Delegates.

Respectfully submitted.

CHARLES J. WHALEN, Chairman.
W. F. BRAASCH.
CHARLES E. MONGAN.
J. NEWTON HUNSBERGER.
W. ALBERT COOK.

On motion of Dr. Whalen, seconded by Dr. Mather Pfeiffenberger, Illinois, the first section of the report was adopted, after discussion by Dr. C. B. Wright, Minnesota.

On motions duly seconded and carried, the remaining sections of the report were adopted one by one and the report was adopted as a whole.

Report of Council on Scientific Assembly

Dr. J. E. Lane, Connecticut, for Dr. J. Shelton Horsley, chairman, presented the following report and moved its adoption:

The Council on Scientific Assembly has considered the resolutions referred to it in regard to the provisions of the Volstead Act and of the Harrison Act.

Whereas these resolutions contain nothing in regard to the scientific value of alcohol or of narcotics but on the other hand refer to questions of ethics and of law, the Council on Scientific Assembly recommends that the resolutions be referred to the Board of Trustees for the opinion of the Bureau of Legal Medicine and Legislation, and to the Judicial Council for their opinion on the points involved.

The motion was seconded by Dr. Arthur T. McCormack, Kentucky, and after discussion by Dr. William E. Bannen, Wisconsin, and by Dr. Thomas C. Chalmers, New York, was adopted.

UNFINISHED BUSINESS

The Secretary read an invitation from Dr. Louis J. Hirschman, Detroit, to the House of Delegates and officers to have luncheon following the adjournment of the morning session.

The Secretary urged all delegates in attendance to sign the daily attendance slips.

Dr. Arthur T. McCormack, Kentucky, moved that the executive session be held at 2 o'clock Tuesday afternoon. The motion was seconded by Dr. Albert E. Bulson, Indiana, and carried.

NEW BUSINESS

Dr. Southgate Leigh, Virginia, presented the following resolution, which was referred to the Board of Trustees:

WHEREAS, It is greatly to the interest of organized medicine that there be a more general attendance of the membership at the annual meetings of the American Medical Association, and

WHEREAS, It is believed that more moderate charges at the convention cities would result in such increase in attendance, therefore be it

Resolved, That the Trustees be and are hereby instructed to arrange for such reasonable rates both at headquarters hotels and at other hotels and boarding houses and report the same in THE JOURNAL.

Report of Committee on Standards of Physical Fitness

Dr. Grant C. Madill, chairman, presented the following report:

The committee appointed to consider "the advisability of amending the present standards of physical fitness of automotive operators, adopted by this association by the addition of standards of mental and moral fitness," has made a preliminary study of the subject of the resolution which reads:

WHEREAS, The Traffic Committee of the Medical Society of the District of Columbia in a report on the standards of fitness to be required of automobile drivers has found that many accidents are due to defects of mental and moral responsibility, and

WHEREAS, Such defects in mental and moral responsibility may be determined by medical examination, as demonstrated by the examination of airplane pilots required by the Department of Commerce, therefore be it

Resolved, That the House of Delegates consider the advisability of amending the present standards of physical fitness of automotive operators, adopted by this association, by the addition of standards of mental and moral fitness to be recommended for adoption by the several states as a condition for issuing licenses to operate motor vehicles, and that this resolution be referred to a special committee for consideration and report at the 1930 meeting. [Adopted by the House of Delegates in 1929.]

The committee finds:

1. That "motor vehicle fatalities in the United States in 1929 numbered 31,000, which is 93.8 per cent of the total number of traffic fatalities. This was an increase of 10.8 per cent over 1928. Motor vehicle fatalities showed an increase from 1920 to 1929 of 147 per cent. . . . For three years past . . . the number of fatalities has been mounting at a faster rate than the number of cars." (Report of Committee on Traffic Accident Statistics, National Conference on Street and Highway Safety, 1930.)

2. That the House of Delegates in 1925 adopted the following report from the section on Ophthalmology.

Dr. C. D. Wescott, Section on Ophthalmology, presented the report of the Committee on Physical Standards for Drivers of Motor Vehicles and a resolution providing for its adoption by the House of Delegates as follows:

REPORT OF THE COMMITTEE ON PHYSICAL STANDARDS FOR DRIVERS OF MOTOR VEHICLES

Every individual driving a motor vehicle, private, public or commercial, of the self-propelled type (automotive) shall be required to present to the motor licensing board in each state a certificate from a reputable physician (the standard of such medical fitness shall be licensure to practice medicine or surgery) in which the following points are certified:

VISUAL STANDARDS

The applicant has vision of at least 20/50 in one eye and vision of at least 20/100 in the other eye, with or without glasses. Applicants with less vision than 20/100 in the poorer eye may, under certain conditions, be qualified by a special or county board (see below).

Double vision shall disqualify.

Such certificates shall be made on a regular form furnished by the motor board, and, on licensing of the applicant by the board, the applicant shall be furnished with a driving certificate that shall be at all times available for inspection.

Examiners shall be recompensed by a fee paid by each applicant, the amount of such fee being determined by the motor boards in each state.

The license must be renewed every year, but the medical certificate must be made anew every three years, provided the applicant makes a sworn statement each intervening year that, to the best of his or her knowledge, there has been no change in his or her physical condition so far as the certificate applies, since the time of the last examination.

SPECIAL OR COUNTY BOARDS OF PHYSICAL LICENSURE

In each state there shall be a board of physical licensure in each county, or one for several counties, consisting of two general practitioners or surgeons and one ophthalmologist, which shall meet at stated intervals and have final decision in all cases. These boards so constituted shall be empowered (1) to examine all persons applying to them for a physical license, (2) to pass on the fitness of candidates regarding whose qualifications any individual examiner may be in doubt, and (3) may, under certain conditions, qualify candidates who lack the visual requirements specified above; viz., applicants with a lower standard of vision than 20/100 in the poorer eye may be qualified by them, provided that the vision in the best eye is at least 20/30 with or without the aid of glasses, and the field of vision is normal, that hearing is efficient and that the applicant is fully capacitated in all other respects physically, and alert mentally. In such cases applicants with one eye partially or wholly blind, or even entirely absent, may be qualified.

These boards shall be appointed by the governor and shall be recompensed either by a fee paid by the applicants who may appear before them, or they shall be salaried officers directly connected with the department in each state controlling the granting of motor licenses.

CONRAD BERENS, JR.
WILLIAM C. FINNOFF.
HARRY S. GRADLE.
WILLIAM CAMPBELL POSEY, Chairman.

WHEREAS, The report of the Committee on Physical Standards for Drivers of Motor Vehicles and the Section on Ophthalmology, signed by Conrad Berens, William C. Finnoff and William Campbell Posey, has been unanimously adopted by the section and by the Section on Preventive and Industrial Medicine and Public Health; therefore, be it

Resolved, That the House of Delegates endorse the said report on Physical Standards for Drivers of Motor Vehicles.

Dr. Wescott stated that: The Section on Preventive and Industrial Medicine and Public Health added to our recommendations, so far as vision was concerned, these three points: "The applicants shall have no disqualifying defects to either legs or arms. All applicants must be able to hear low spoken voice at five feet. The mentality of the applicant must be adequate and the heart's action reasonably healthy."

Dr. Wescott moved the adoption of the resolution. This motion was seconded by Dr. George F. Keiper, Indiana, and carried.

3. That in 1929, "ten states and the District of Columbia have mandatory examinations of drivers for operator's licenses. Seven states require drivers' licenses but not mandatory examinations. Apparently thirty-one states require no examination of any type." (Report of Traffic Committee, Medical Society of the District of Columbia, 1929.)

4. That according to available statistics defects of limbs, sight and hearing in the driver play a part in the production of automobile fatalities, but that causes in the realm of behavior play a highly important part.

5. That there do not appear to be available at this time any practical standards of examination by which these potential mental and moral hazards may be revealed. The methods employed by the Department of Commerce for testing airplane pilots are too elaborate for adoption by state traffic departments.

6. That the physical standards recommended by this association in 1925 have been ignored by the states in the formulation of their traffic regulations where any method of licensing drivers has been adopted.

In view of the steadily mounting death rate from motor vehicle accidents, it is recommended: (*a*) that this association use its influence in the largest possible way, by direct agitation of the subject, and by cooperation with such organizations as the National Safety Council, the National Parent-Teachers Association and the National Education Association to secure the adoption by all the states of regulations requiring the licensing of motor vehicle operators on the basis of examination, such examination being designed to reveal the applicant's physical and mental capacity to operate such a vehicle safely.

(*b*) That this or a similar committee be authorized to study the subject further in order to formulate a practicable set of standards of physical, mental and moral fitness, for recommendation by this association to the several states as the basis of their required examination of prospective motor vehicle operators; the results of the committee's study to be submitted to the House of Delegates at a subsequent meeting.

Respectfully submitted.

GRANT C. MADILL, Chairman.
JOHN M. DODSON.
G. HENRY MUNDT.
HENRY C. MACATEE.

On motion of Dr. Madill, seconded by Dr. J. Richard Kevin, New York, and carried, the report was adopted.

Report of Committee on Military Affairs and National Defense

Dr. Holman Taylor, chairman, read the following report of the Committee on Military Affairs and National Defense, which had been appointed by the Board of Trustees:

Gentlemen:

We, your Committee on Military Affairs and National Defense, beg leave to present our first annual report, as follows:

Our committee has been created since the last annual session of the American Medical Association. It has, therefore, not had an opportunity to organize for the purpose for which it was created and to lay out a course of procedure of anything like a promising sort. There has been much correspondence, however, between the members of the committee and, as well, the Surgeon Generals of the Army, the Navy and the United States Public Health Service, and there are one or two matters that appear to us to be clear at this time, to which we may properly call attention.

This committee was created in response to a resolution providing for such a committee for the purpose of receiving "all matters pertaining to national defense and military preparedness." There has been nothing referred to the committee officially, but it is our opinion that we have a certain degree of initiative; hence the recommendations we are about to make.

It will be recalled by many that when the great emergency came upon us in 1916 we were, as a nation, wholly and totally unprepared for war. The fact that we attained to a reasonable degree of prepardness within the astonishing short period of a year is beside the point. The fact remains that we were not ready, and had it not been for the further fact that the enemy was deadlocked with other forces, the story would have been much sadder and certainly very different. If any group of our citizenship was in any way partially prepared and in the process of being prepared, it was the medical profession; yet who among those of us that participated in that supreme effort does not shudder when he thinks of the chaotic conditions that obtained? One of the purposes of our committee will be eventually to bring to the attention of the medical profession of this country in the most impressive and persuasive way possible a true picture of the state of affairs existing at that time, together with recommendations which, the committee hopes, if carried out, will help to prevent a repetition of the confusion, uncertainty and lost motion of those days. That we weathered the storm then is incident to the fact that great minds were in charge. Had those minds been applied to the problem earlier than they were, and had their plans received sufficient support, certainly conditions would have been improved and the very necessary medical and surgical service would have been more immediately available to our combatant and other governmental forces.

It is appreciated by our committee that, since the days of the World War, much has been accomplished by way of preparedness, including better and more definite laws, particularly as pertain to national defense proper, and a better and more complete organization of the armed and public health forces of the country. Even so, unless the medical profession prepares to take its place in the scheme of things, much of success will be lacking until much precious time has elapsed following the onset of a great national emergency.

In the meantime, our committee recommends that the situation as briefly outlined here be called to the attention of the profession at large, and that each of our constituent state associations be requested to appoint a state committee on "Military Affairs and National Defense," with much the same purposes as relate to the states as the American Medical Association committee has for its existence, all committees to work together in developing national medical preparedness.

Respectfully submitted.

HOLMAN TAYLOR, Chairman.
F. B. LUND.
E. A. MEYERDING.
F. K. BOLAND.

The report was adopted on motion of Dr. Taylor, seconded by Dr. Arthur T. McCormack, Kentucky, and carried.

Resolution on Measures for Checking Clinical Thermometers

Dr. George W. Reese, Pennsylvania, presented the following resolution, which was referred to the Reference Committee on Hygiene and Public Health:

WHEREAS, Investigations made of numerous clinical thermometers offered for sale in the open market indicate that these devices are not always correctly standardized even though they carry a certificate indicating that they have been checked with a standard instrument secured from the Bureau of Standards in Washington, D. C., and

WHEREAS, Correct reading of the temperature of the patient is of the utmost importance as a clinical sign and that a decision of the greatest seriousness concerning the health and even the life of the patient may depend on accurate recording of the temperature of the patient; therefore, be it

Resolved, That this House of Delegates through the Board of Trustees request the Bureau of Standards to formulate a method whereby thermometers alleged to conform with a standard set by the Bureau of Standards be checked as to such conformation, and that suitable penalties be provided by law for violation of such standards by manufacturers.

Dr. Albert E. Bulson, Indiana, moved that properly vouched for presidents and secretaries of state associations be permitted to attend the executive session Tuesday afternoon. The motion was duly seconded and carried.

Dr. Albert Soiland, California, announced that the California Medical Association, through its delegates, presented for consideration Los Angeles as the 1932 meeting place.

Amendment to Constitution

Dr. D. E. Sullivan, New Hampshire, offered the following amendment as a substitute for section 2, article 5, of the Constitution, which must be laid on the table for action next year:

The House of Delegates is composed of delegates elected by the constituent associations and by the sections of the Scientific Assembly, and of delegates from the medical departments of the Army and the Navy and the Public Health Service and Veterans' Bureau appointed by the Surgeon General of the respective departments and by the medical director of the Veterans' Bureau. The Trustees, the ex-Presidents of the Association and the members of the several councils shall be ex officio members of the House of Delegates without the right to vote, provided that members of the Councils who are also elected delegates may exercise all the rights of elected delegates.

Amendment to By-Laws

Dr. George E. Follansbee, chairman, Judicial Council, offered the following resolution amending chapter XI, section 12, of the By-Laws, which was referred to the Reference Committee on Amendments to the Constitution and By-Laws:

WHEREAS, Conflict in respect to Fellows of the Scientific Assembly exists in the By-Laws of this association in that chapter IX, section 1, provides that the Judicial Council shall have final jurisdiction over all matters pertaining to Fellowship and chapter XI, section 12, places final jurisdiction in some cases in the House of Delegates, and

WHEREAS, The number of such cases and the times at which they come to attention makes it unpractical to refer them with recommendations to the House of Delegates for action; and

WHEREAS, Chapter IX, section 1, has been in satisfactory operation for many years without criticism; be it

Resolved, That chapter XI, section 12, reading "The House of Delegates shall have the power to discipline or expel a member of the American Medical Association or a Fellow of its Scientific Assembly on recommendation of the Judicial Council," adopted in 1928, be amended by deleting the words "or a Fellow of its Scientific Assembly," thus removing the existing conflict and leaving final jurisdiction over Fellowship in all cases in the Judicial Council.

The House of Delegates recessed at 12 o'clock to reconvene at 2 p. m., Tuesday, June 24.

Tuesday Afternoon, June 24

The House of Delegates reconvened at 2 o'clock, Tuesday afternoon, and heard the report of the Reference Committee on Legislation and Public Relations on the resolution relative to veterans' legislation.

Dr. C. E. Mongan, Massachusetts, moved the adoption of the resolution. The motion was seconded by Dr. W. F. Braasch, Minnesota, and after discussion by Drs. Morris Fishbein, editor of THE JOURNAL; Donald Macrae, Jr., Iowa; E. R. Brush, Ohio; Southgate Leigh, Virginia; James S. McLester, Section on Practice of Medicine; H. M. Johnson, Minnesota; H. H. Shoulders, Tennessee, and Albert E. Bulson, Indiana, was adopted.

On motion of Dr. B. F. Bailey, Nebraska, duly seconded and carried, the House directed that the resolution be wired to the President of the United States.

The House of Delegates reconvened, following an executive session, at 4 o'clock Tuesday afternoon, the Speaker, Dr. F. C. Warnshuis, presiding.

Report of Reference Committee on Amendments to the Constitution and By-Laws

Dr. E. C. Thrash, chairman, presented the following report:

1. The Judicial Council recommends that our By-Laws be changed in reference to the induction of fellows into the American Medical Association, which will require Chapter XI, section 2, to have the following paragraph added.

Any member of this association holding a degree equal in requirement to that of M.D. granted by a school of medicine recognized by the American Medical Association entitling the holder to apply to a state board of medical examiners and registration for license to practice medicine, and who on the prescribed form shall apply for Fellowship and subscribe for THE JOURNAL, paying the annual Fellowship dues for the current year, shall be inducted into the Association as a Fellow unless the application is disapproved by the Judicial Council.

2. The Judicial Council has called attention in a resolution to the House of Delegates that Chapter XI, section 12, is in conflict with Chapter IX, section 1. In order to correct this discrepancy and make the two sections conform, chapter XI, section 12, reading "The House of Delegates shall have the power to discipline or expel a member of the American Medical Association or a Fellow of the Scientific Assembly on recommendation of the Judicial Council," should be changed by striking out the words "or a Fellow of the Scientific Assembly," making Chapter XI, section 12, read "The House of Delegates shall have the power to discipline or expel a member of the American Medical Association on recommendation of the Judicial Council."

3. Since the House of Delegates voted to place the Bureau of Medical Economics in the hands of the Board of Trustees, there will be no need of any change in the Constitution or By-Laws to put this bureau in operation.

Respectfully submitted. E. C. THRASH, Chairman.

On motion of Dr. Thrash, duly seconded, the first section of the report was adopted after discussion by Drs. George W. Reese, Pennsylvania; Arthur T. McCormack, Kentucky; J. Newton Hunsberger, Pennsylvania; E. C. Thrash, Georgia, and George E. Follansbee, Ohio.

Dr. C. B. Wright, Minnesota, moved that this amendment be made an amendment to the By-Laws. The motion was seconded by Dr. Arthur J. Bedell, New York, and carried.

Dr. Thrash gave notice of a correction to be made in chapter XI, section 12, of the By-Laws, which the Speaker declared would be acted on Thursday afternoon.

On motion of Dr. Thrash, seconded by Dr. Arthur J. Bedell, New York, the report of the committee was adopted as a whole.

Resolution on Radio Broadcasting

Dr. Charles E. Humiston, Illinois, presented the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, Licenses issued by the Federal Radio Commission to broadcast have frequently been used as authority for disseminating false, misleading, pernicious and even obscene statements concerning matters of health, not for the benefit of the public but solely for the promotion of the selfish interests of the proprietor of the broadcasting station:

Resolved, That the House of Delegates of the American Medical Association, recognizing the legal prohibition on the censorship of radio programs, urges on the Federal Radio Commission the necessity for extreme care in the character and qualifications of persons and corporations desiring to broadcast medical programs and a liberal construction in favor of the public of the law authorizing the revocation of licenses that are against public interest.

Resolution on Administering Benefits to Disabled Veterans with Nonservice Disabilities

Dr. H. H. Shoulders, Tennessee, presented the following resolution, which was referred to the reference Committee on Legislation and Public Relations:

WHEREAS, The government of the United States has determined upon a policy of rendering aid to disabled veterans with nonservice connected disabilities, and

WHEREAS, The policy at present involves a large outlay of money on the part of the government in the construction and administration of government hospitals, and

WHEREAS, Such benefits to veterans are most available to men who reside near a government hospital and least available to men who reside at a distance from a government hospital, the benefits thereby rendered unequally to veterans, therefore be it

Resolved, That the American Medical Association urge upon veterans' organizations and the Congress of the United States the wisdom and fairness of administering benefits to disabled veterans with nonservice connected disabilities through the agency of a disability insurance policy which would be issued to each veteran and which would provide for the payment of a sum of money per week in the event of total disability during the period of such total disability, on the satisfactory proof of such total disability being furnished the government. That the Veterans' Bureau in each state be the final arbiter in determining questions of disability when disputes arise. Such a policy would enable the government to render the necessary aid to worthy veterans. It would preserve

to the veteran his liberty of choosing the persons and institutions to render such aid. It would preserve the often declared policy of the government not to enter private business in competition with its citizens.

The House recessed at 4:15 p. m., to reconvene at 2 o'clock Thursday afternoon.

Third Meeting—Thursday Afternoon, June 26

The House of Delegates was called to order at 2 p. m., by the Speaker, Dr. F. C. Warnshuis.

Supplementary Report of the Reference Committee on Credentials

Dr. J. D. Brook, chairman, reported that 159 delegates had filed proper credentials. He added that Dr. Dudley Smith, California, had been properly certified as a delegate but had lost his credentials; also that the delegate from Delaware was not in attendance nor was his duly elected alternate but that Dr. W. O. LaMotte, who was not regularly elected alternate, presented credentials, which was in violation of the rules.

On motion of Dr. Percy T. Magan, California, seconded by Dr. A. A. Ross, Texas, and carried, Dr. Smith was seated.

The Speaker ruled that, in accordance with the resolution of the House, only a delegate or his proper alternate may serve.

The motion to seat Dr. LaMotte, made by Dr. Arthur T. McCormack, Kentucky, and seconded by Dr. William Kuykendall, Oregon, was lost.

Dr. Brook reported that 160 delegates had filed proper credentials and moved the adoption of the report. The motion was seconded by Dr. T. O. Freeman, Illinois, and carried.

The Secretary called the roll and announced that a quorum was present.

Report of Board of Trustees

Dr. J. H. Walsh, Secretary of the Board, presented the following report:

1. Relative to the resolution introduced by Dr. Southgate Leigh, concerning hotel accommodations at annual sessions, the Board instructed its committee to heed the resolution and to do all it can to see that it is carried out.

2. Concerning the resolution of Dr. Vander Veer, protesting against those portions of the prohibition and narcotic laws which deprive the citizen of the right to privacy regarding his disease and ailments, the Board approves the suggestions contained in the resolution and will make every effort to fulfil them.

Dr. O. S. Wightman, New York, moved that section 1 of the report be adopted. The motion was seconded by Dr. Charles J. Whalen, Illinois, and carried.

Dr. Wightman moved that section 2 of the report be adopted. The motion was seconded by Dr. C. S. Gorsline, Michigan, and carried.

On motion of Dr. Vander Veer, New York, seconded by Dr. E. P. Sloan, Illinois, and carried, the report of the Board of Trustees was adopted as a whole.

Supplementary Report of Reference Committee on Legislation and Public Relations

Dr. C. E. Mongan, for Dr. Charles J. Whalen, chairman, presented the following report:

1. The committee has carefully considered the excellent resolution presented by the Board of Trustees relative to federal aid for maternal welfare, which shows evidence of most thorough study and careful preparation. The committee feels that the beneficial effect of this resolution when passed by the House of Delegates of the American Medical Association should have a far-reaching beneficial effect and should be of great assistance to the profession throughout the United States in its campaign of education of the public in which we are endeavoring to show the menacing effect of paternalism so beautifully exemplified in the so-called Sheppard-Towner and similar forms of legislation.

2. The committee presented the following supplementary Sheppard-Towner resolution:

Resolved, That the Board of Trustees be requested to initiate as speedily as practicable a movement to enlist every state medical association and county medical society, and every member of the medical profession, in a movement to carry into effect the policy of the American Medical Association, as defined in the preceding resolution, with respect to cooperation between federal and state governments in public health activities.

3. Your committee is heartily in favor of the resolution relative to censorship of radio programs.

4. Relative to the resolution submitted by Dr. Shoulders providing for the administering of benefits to disabled veterans with nonservice disabilities, your committee considers that it is not within the province of the American Medical Association to recommend that the government pay money to any individual who may be disabled from any cause—that the determination of methods of distribution of disability benefits lies within the scope of the province of the pension bureau of the government.

Respectfully submitted.

CHARLES J. WHALEN, Chairman.
CHARLES E. MONGAN.
J. NEWTON HUNSBERGER.
W. F. BRAASCH.
W. ALBERT COOK.

On motions duly seconded and carried, the report of the committee was adopted section by section and as a whole.

Supplementary Report of Reference Committee on Hygiene and Public Health

Dr. W. F. Draper, United States Public Health Service, presented the following report:

The Committee on Hygiene and Public Health has considered the resolution pertaining to measures for checking clinical thermometers to insure closer conformation to the standard for clinical thermometers and recommends its adoption.

Respectfully submitted.

W. F. DRAPER, Chairman.
C. E. HUMISTON.
W. R. STEINER.
ALBERT SOILAND.
C. W. WAGGONER.

Dr. Draper moved the adoption of the resolution. The motion was seconded by Dr. Charles J. Whalen, Illinois, and carried.

Supplementary Report of Reference Committee on Amendments to Constitution and By-Laws

Dr. E. C. Thrash, chairman, presented the following report:

The Judicial Council recommends that our By-Laws be changed in reference to the induction of Fellows into the American Medical Association, which will require chapter XI, section 2, to have the following paragraph added:

Any member of this Association holding a degree equal in requirement to that of M.D. granted by a school of medicine recognized by the American Medical Association entitling the holder to apply to a state board of medical examiners and registration for license to practice medicine, and who on the prescribed form shall apply for Fellowship and subscribe for THE JOURNAL, paying the annual Fellowship dues for the current year, shall be inducted into the Association as a Fellow unless the application is disapproved by the Judicial Council.

The Judicial Council has called attention in a resolution to the House of Delegates that chapter XI, section 12, is in conflict with chapter IX, section 1. In order to correct this discrepancy and make the two sections conform, chapter XI, section 12, reading "The House of Delegates shall have the power to discipline or expel a member of the American Medical Association or a Fellow of its Scientific Assembly on recommendation of the Judicial Council" should be changed by striking out the words "or a Fellow of the Scientific Assembly," making chapter XI, section 12, read "The House of Delegates shall have the power to discipline or expel a member of the American Medical Association on recommendation of the Judicial Council."

Respectfully submitted.

E. C. THRASH, Chairman.

Dr. Thrash moved the adoption of the amendments. The motion was seconded by Dr. Arthur J. Bedell, New York, and carried.

Supplementary Report of Reference Committee on Reports of Board of Trustees and Secretary

Dr. Grant C. Madill, New York, presented the following report:

In reviewing the supplementary report of the Board of Trustees, your committee is gratified by the successful efforts of the Board in securing a satisfactory adjustment of the physicians' income tax, as computed on earned incomes. Not only was the case at issue properly cared for, but also a ruling was promulgated by the Commissioner of Internal Revenue that will serve to avoid similar difficulties in the future.

We commend the activities of the Board in connection with the recently enacted tariff bill, in which the tariff rate imposed on surgical and hospital equipment was in most instances less than proposed in the original bill.

It is quite gratifying to note the cooperation of food manufacturers with the special Committee on Foods. The ready response of manufacturers, which was far greater than anticipated, emphasizes the wisdom of this undertaking, the value of which is inestimable.

We commend the activities of the Association personnel in their field work and recommend its continuation along this line.

Your committee joins with the Board of Trustees in urging the members of the House of Delegates to visit the Association headquarters and become more familiar with the character and scope of the work that is being done.

Respectfully submitted. GRANT C. MADILL, Chairman.

On motion of Dr. Madill, seconded by Dr. O. S. Wightman, New York, and carried, the report of the committee was adopted.

Supplementary Report of Judicial Council

Dr. G. E. Follansbee, chairman, presented the following report:

It is the opinion of the Judicial Council that, as it is unethical for a physician to disclose the confidence of his patients except under compulsion of law, an effort should be made to change the regulations so as to remove the objectionable features as outlined in the resolution of Dr. Vander Veer.

On motion of Dr. Follansbee, seconded by Dr. Thomas C. Chalmers, New York, and carried, the report was adopted.

Resolution Affirming Certain Principles with Reference to Psychiatric Service in Criminal Courts

Dr. T. B. Throckmorton, Section on Nervous and Mental Diseases, presented the following resolution, which was adopted on motion of Dr. Throckmorton, seconded by Dr. Charles E. Mongan, Massachusetts, and carried:

Resolved, That the Section on Nervous and Mental Diseases hereby declares its adherence to the principles stated in the Report of the Committee on Psychiatric Jurisprudence, Section on Criminal Law and Criminology, American Bar Association, and approved by that association at its meeting held in Memphis, Tenn., Oct. 24, 1929, namely:

"1. That there be available to every criminal and juvenile court a psychiatric service to assist the court in the disposition of offenders.

"2. That no criminal be sentenced for any felony in any case in which the judge has any discretion as to the sentence until there be filed as a part of the record a psychiatric report.

"3. That there be a psychiatric service available to every penal and correctional institution.

"4. That there be a psychiatric report on every prisoner convicted of a felony before he is released.

"5. That there be established in each state a complete system of administrative transfer and parole, and that there be no decision for or against any parole or any transfer from one institution to another, without a psychiatric report."

Resolved, Further, that the section recommends that the House of Delegates of the American Medical Association adopt the principles stated above and request the Board of Trustees to take such action as may be necessary to bring about the cooperation of state and county medical associations with corresponding state and local bar associations in securing, as far as possible, the adoption of these principles in practice.

Resolution on Mental Hygiene

Dr. Throckmorton presented the following resolution, which was adopted on his motion, seconded by Dr. J. W. Burns, Texas, and carried:

WHEREAS, The problem of the mental disorders and defectives and the mental health of the country constitute one of the most serious situations with which scientific medicine is at this time concerned, and

WHEREAS, The hospitalization and care of an increasing number of mental disorders and defectives constitute one of the most difficult economic situations affecting the medical profession, and

WHEREAS, There is in the organization of the American Medical Association no regularly constituted committee or body especially concerned with this problem; therefore be it

Resolved, By the Section on Nervous and Mental Diseases of the American Medical Association that it recommend to the House of Delegates that the Board of Trustees of the American Medical Association be authorized to appoint a special committee of five Fellows of the Association especially interested in these problems with a view to an investigation of the situation and to making a report to the Board of Trustees on the manner in which the Association can be of service in the solution of these problems.

Resolution on Investigation of Hospitals for Mental Patients

Dr. Throckmorton presented the following resolution, which was adopted on his motion, seconded by Dr. Arthur J. Bedell, New York, and carried:

WHEREAS, There has been no fixed policy of the American Medical Association toward the handling of the institutional public in the insane hospitals of the country; and

WHEREAS, There is a growing consciousness of the need for a better understanding of the problems of these institutions especially as regards their medical personnel; therefore be it

Resolved, That the Council on Medical Education and Hospitals be requested to make a thorough investigation of all hospitals caring for mental patients within the next one or two years whereby a more accurate knowledge of the situation may be obtained and the need of further developments in the field be pointed out.

Resolution on Saving for Sickness

The following communication was presented by Dr. Olin West, Secretary:

University of California
College of Dentistry
San Francisco

June 24, 1930.

Dr. Olin West,
Secretary, A. M. A.,
Detroit, Michigan.

My dear Dr. West:

I discussed the matter outlined in the suggested resolutions appended herewith at the recent meeting of the Western Branch of the A. P. H. A. at Salt Lake City, including some of the officials of the parent association and with a number of the prominent members of the A. D. A. whom I have met on this survey, I am now making. The proposal seems to meet with general approval.

If it meets with your approval and your House of Delegates concurs, I will be glad to submit it to the A. D. A. in Denver in July and to the A. P. H. A. of which I am a Fellow in Fort Worth in October.

The purpose of the resolution is simply to encourage people to meet their obligations in times of sickness or injury.

Very sincerely yours,

GUY S. MILLBERRY.

WHEREAS, The banks and banking interests of America encourage thrift and the establishment of savings accounts through their publicity bureaus, and advertising agencies, for purposes of education, travel, Christmas fund, et cetera; and

WHEREAS, Such purposes, while desirable, are not as beneficial to the individual, the community or the state as is the purpose of saving for sickness; and

WHEREAS, The purpose of "saving for sickness" is a practical economic procedure that will insure the individual against unexpected affliction and hardship by providing for serious emergencies, yet this purpose need not involve the expenditure of the fund, but should tend to encourage the individual to maintain a state of good health which the professions and associations concerned therewith are continually promulgating; therefore be it

Resolved, That the American Medical Association recommend to the American Bankers Association and all its affiliated or allied associations that they adopt a policy of encouraging the American public to save for sickness through such agencies as they may employ in encouraging thrift and the establishing of savings accounts; and be it further

Resolved, That this association proffer its services and facilities in furnishing reliable information related to this problem to the American Bankers Association or its authorized agencies if desired.

The Secretary also presented a telegram from the American Public Health Association on the same subject:

Referring to proposed resolution of Guy S. Millberry on sickness saving, approve resolution in principle. Will submit this to governing council for adoption at annual meeting Fort Worth in October.

Dr. E. C. Thrash, Georgia, moved that the resolution be referred to the Bureau on Medical Economics. The motion was seconded by Dr. H. B. Everett, Tennessee, and carried.

Greetings from National Association of Retail Druggists

The Secretary read a telegram from the secretary of the National Association of Retail Druggists eloquently expressing good will, congratulations and fraternal greetings to the American Medical Association.

ELECTION OF OFFICERS

Election of President-Elect

The Speaker called for nominations for the office of President-Elect of the American Medical Association.

Dr. J. W. Burns, Texas, nominated Dr. E. H. Cary, Dallas, Texas. The nomination was seconded by Dr. Holman Taylor, Texas; Dr. E. C. Thrash, Georgia; Dr. J. W. Van Derslice, Illinois; Dr. S. L. Baysinger, Missouri; Dr. N. B. Van Etten, New York; Dr. Dudley Smith, California; Dr. A. A. Ross, Texas; Dr. F. P. Miller, Texas; Dr. Carl F. Moll, Michigan; Dr. A. T. McCormack, Kentucky; Dr. Arthur W. Booth, New York; Dr. W. A. Cook, Oklahoma; Dr. T. C. Chalmers, New York, and Dr. T. B. Trockmorton, Section on Nervous and Mental Diseases.

Dr. H. W. Cummings, Texas, nominated Dr. M. L. Graves, Houston, Texas. The nomination was seconded by Dr. A. W. Hornbogen, Michigan, and Dr. Arthur J. Bedell, New York.

Dr. C. B. Wright, Minnesota, nominated Dr. E. Starr Judd, Rochester, Minn. The nomination was seconded by Dr. Randolph Winslow, Maryland; Dr. J. R. Kevin, New York; Dr. Walter F. Donaldson, Pennsylvania; Dr. W. E. Stevens, California; Dr. Donald Macrae, Jr., Iowa; Dr. Percy T. Magan, California; Dr. Frank L. Smithies, Section on Gastro-Enterology and Proctology; Dr. J. Tate Mason, Section on Surgery, General and Abdominal; Dr. A. J. Crowell, North Carolina, and Dr. F. C. E. Mattison, California.

Dr. Arthur T. McCormack, Kentucky, moved that the nominations be closed. The motion was seconded by several delegates and carried.

The Speaker appointed as tellers Drs. O. S. Wightman, New York; F. P. Miller, Texas; Wells Teachnor, Sr., Ohio; T. C. Freeman, Illinois, and W. F. Braasch, Minnesota.

The Secretary announced that of 148 votes cast, Dr. E. H. Cary received 69; Dr. M. L. Graves, 4; Dr. E. Starr Judd, 75.

The Speaker declared Dr. E. Starr Judd elected President-Elect.

On motion of Dr. J. D. Brook, Michigan, seconded by Dr. A. A. Ross, Texas, and carried, the election of Dr. Judd was made unanimous.

Election of Vice President

Dr. Carl F. Moll, Michigan, nominated Dr. Louis J. Hirschman. The nomination was seconded by Dr. A. W. Hornbogen, Michigan.

A motion was regularly made, seconded and carried, that the nominations be closed and the Secretary cast the vote of the House for Dr. Louis J. Hirschman as Vice President.

The Secretary cast the vote of the House for Dr. Louis J. Hirschman and the Speaker declared Dr. Hirschman elected Vice President by the unanimous vote of the House of Delegates.

Election of Secretary

Dr. A. E. Bulson, Indiana, nominated Dr. Olin West, Chicago, for Secretary.

Dr. J. W. Burns, Texas, moved that nominations be closed and that the Vice Speaker cast the vote of the House for Dr. Olin West to succeed himself as Secretary.

The motion was seconded by Dr. D. S. Dougherty, New York, and Dr. W. H. Mayer, Pennsylvania, and carried.

The Vice Speaker cast the vote of the House and the Speaker declared Dr. Olin West elected Secretary of the American Medical Association.

Election of Treasurer

Dr. Edward B. Heckel, chairman, Board of Trustees, nominated Dr. Austin A. Hayden, Chicago.

Dr. Arthur J. Bedell, New York, seconded the nomination and moved that nominations be closed and the Secretary be instructed to cast the ballot of the House for Dr. Hayden as Treasurer. The motion was seconded and carried.

The Secretary cast the vote of the House and the Speaker declared Dr. Hayden elected Treasurer of the Association.

Election of Speaker of the House of Delegates

The Vice Speaker, Dr. Albert E. Bulson, Indiana, took the Chair and declared that nominations were in order for Speaker of the House of Delegates.

Dr. A. W. Hornbogen, Michigan, nominated Dr. F. C. Warnshuis, Grand Rapids, Mich., as Speaker of the House of Delegates. Dr. Sol. G. Kahn, Utah, seconded the nomination and moved that nominations be closed and that the Secretary be instructed to cast the ballot of the House for Dr. Warnshuis as Speaker. The motion was seconded by Dr. C. S. Gorsline, Michigan, and carried.

The Secretary cast the vote of the House and the Vice Speaker declared Dr. F. C. Warnshuis elected Speaker of the House of Delegates.

Election of Vice Speaker

The Speaker resumed the Chair and declared the next order of business to be the election of a Vice Speaker.

Dr. Harry Elliott, Indiana, nominated Dr. Albert E. Bulson, Indiana. Dr. E. C. Thrash, Georgia, seconded the nomination and moved that nominations be closed and the Secretary be instructed to cast the ballot of the House for Dr. Bulson as Vice Speaker. The motion was seconded by Dr. Arthur T. McCormack, Kentucky, and carried.

The Secretary cast the ballot of the House and the Speaker declared Dr. Bulson elected Vice Speaker of the House of Delegates.

Election of Trustees

The Speaker announced that the next order of business was the election of a trustee to serve until the annual session of 1931, to fill the unexpired term of Charles W. Richardson, deceased.

Dr. Randolph Winslow, Maryland, nominated Dr. Thomas S. Cullen, Baltimore. The nomination was seconded by Dr. Henry C. Macatee, District of Columbia, and Dr. E. J. Goodwin, Missouri. Dr. T. O. Freeman, Illinois, moved that nominations be closed and that the Secretary cast the vote of the House for Dr. Cullen. The motion was seconded by Dr. J. W. Burns, Texas, and carried.

The Secretary cast the ballot of the House for Dr. Thomas S. Cullen to serve as a member of the Board of Trustees until 1931 and the Speaker declared Dr. Cullen elected.

The Speaker called for nominations for trustee to succeed Dr. Joseph A. Pettit, Portland, Ore., for a term of five years.

Dr. William Kuykendall, Oregon, nominated Dr. Joseph A. Pettit, Portland, Ore., to succeed himself as trustee. The nomination was seconded by Dr. A. W. Hornbogen, Michigan; Dr. Mather Pfeiffenberger, Illinois; Dr. F. P. Miller, Texas, and Dr. Earl Whedon, Wyoming.

Dr. J. B. Harris, California, nominated Dr. Albert Soiland, Los Angeles. The nomination was seconded by Dr. J. G. Taylor, Wisconsin, and Dr. James T. Case, Section on Radiology.

The Speaker declared nominations closed. The Secretary announced that, of 141 votes cast, Dr. Joseph A. Pettit received 72 and Dr. Albert Soiland 69.

The Speaker declared Dr. Pettit elected trustee for a term of five years.

On motion of Dr. Junius B. Harris, California, seconded and carried, the election of Dr. Pettit was declared unanimous.

Address of Dr. Rollin H. Stevens

The Secretary presented Dr. Rollin H. Stevens, chairman of the Local Committee on Arrangements, who spoke as follows:

Mr. Speaker and Members of the House of Delegates:

I wish first of all to thank you for the honor that you have conferred upon me in appointing me chairman of the Local Committee on Arrangements. I also wish to thank the officers, the trustees and delegates, for their very helpful cooperation during the period in which we have had to make arrangements for this meeting. Whether or not we have carried out the duties and work that you have planned for us to do I leave for you to decide. I trust that you have had an enjoyable time, that your work has been very successful and to your satisfaction.

We hope it will not be fourteen years before you will return to Detroit. I don't expect to be here then to greet you, but I hope that I may.

Your convention is nearly over, and if there is anything further that we have not done that we should have done, anything to add to your comfort or convenience, we trust you will let us know.

Address of President-Elect E. Starr Judd

The Speaker introduced President-Elect E. Starr Judd, who addressed the House as follows:

I don't know just how to thank you men for this great honor. I formerly was elected secretary of the surgical section and then chairman of the surgical section, and then finally was a member of the Council on Scientific Assembly, so that I know a little of the working of those groups, but I never had hoped to attain this position.

I want to thank you very much for the honor. I realize the responsibility that goes with it. I hope that you will help us in the next year, as I know you have helped former presidents in years gone by. I thank you, gentlemen, very much.

Election of Trustee

The Speaker called for nominations for trustee to succeed Dr. J. H. J. Upham, Columbus, Ohio, for a term of five years.

Dr. B. R. McClellan, Ohio, nominated Dr. J. H. J. Upham. The nomination was seconded by Dr. James R. Bloss, West Virginia; Dr. O. S. Wightman, New York; Dr. W. H. Mayer, Pennsylvania; Dr. E. J. Goodwin, Missouri, and Dr. Arthur T. McCormack, Kentucky, who moved that nominations be closed and the Secretary cast the ballot of the House for Dr. Upham. The motion was seconded by several delegates and carried.

The Secretary cast the ballot of the House for Dr. J. H. J. Upham for trustee of the American Medical Association and the Speaker declared Dr. Upham elected a member of the Board of Trustees for a term of five years.

Nominations for Standing Committees

The President, Dr. William Gerry Morgan, presented the following nominations for standing committees:

Dr. George E. Follansbee, Cleveland, to succeed himself as a member of the Judicial Council for a term of five years.

Dr. Charles E. Humiston, Illinois, to succeed Dr. Louis B. Wilson as a member of the Council on Medical Education and Hospitals for a term of seven years.

Dr. Frank Smithies, Chicago, to succeed Dr. J. Shelton Horsley on the Council on Scientific Assembly for a term of five years.

On motions duly seconded and carried, the nominations were confirmed.

Election of Honorary Fellows

The Secretary announced that the Section on Gastro-Enterology and Proctology offered the names of Prof. Dr. Ismar Boas of Berlin and Prof. Dr. J. P. Pavlov of Leningrad for Honorary Fellowship and that the nominations had received the approval of the Council on Scientific Assembly.

On motion of Dr. O. S. Wightman, New York, seconded by Dr. Arthur J. Bedell, New York, and carried, Drs. Boas and Pavlov were elected Honorary Fellows.

Election of Affiliate Fellows

The Secretary read the list of names proposed for Affiliate Fellowship and approved by the Council on Scientific Assembly:

Bogart, J. B., Los Angeles.
Bosworth, J. L., Mill Creek, W. Va.
Burns, Hiram Hutchins, Plymouth, Mass.
Coffin, L. A., New York.
Davis, Herbert, St. Paul.
Deziel, G., Minneapolis.
Hope, Walter G., Santa Monica, Calif.
McIntyre, George, Minneapolis.
McLaren, Jennette, St. Paul.
McLaughlin, Henry V., Brookline, Mass.
Nelson, H. S., Minneapolis.
Northrup, W. P., New York.
Pigott, J. F., New Orleans.
Portmann, W. C., Jackson, Minn.
Ritter, C. A., Kansas City, Mo.
Robilliard, W. H., Faribault, Minn.
Schifferle, Edward, Creston, Iowa.
Smith, M. C., Lynn, Mass.

On motion of Dr. Arthur T. McCormack, Kentucky, seconded by Dr. E. J. Goodwin, Missouri, and carried, the physicians listed were elected to Affiliate Fellowship in the American Medical Association.

Election of Associate Fellows

The Secretary read the names proposed for Associate Fellowship and approved by the Judicial Council or by the sections named:

SECTION ON PHARMACOLOGY AND THERAPEUTICS

Gordon, Samuel M., Chicago.
Stockton, Andrew Benton, San Francisco.
Thienes, C. H., Los Angeles.

SECTION ON PATHOLOGY AND PHYSIOLOGY

MacEachern, Malcolm T., Chicago.
Roe, Joseph Hyram, Washington, D. C.

SECTION ON PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH

Payne, George C., San Juan, Porto Rico.

AMERICAN MEDICAL MISSIONARIES

Brownsberger, Claire N., Narsapur, South India.
Crooks, Charles Henry, Lampang, Siam.
Everham, Marguerite E., Swatow, South China.
Hofstra, Richard, Amoy, Fukien, China.
Kantzer, Floyd B., Columbus, Ohio.
Marden, Jesse K., Paleon, Greece.

On motion of Dr. McLain Rogers, Oklahoma, seconded by Dr. R. L. Green, Illinois, and carried, the nominees listed were elected to Associate Fellowship.

Place of Annual Session

The Speaker announced that the next order of business was the selection of the place of the 1931 annual session and requested that the Board of Trustees make nominations.

Dr. Edward B. Heckel, Board of Trustees, stated that two invitations had been received, one from Philadelphia and one from Atlantic City. The Board had had the facilities of these cities investigated and either one would be satisfactory.

Dr. W. B. Stewart, New Jersey, presented the advantages of Atlantic City, and Dr. J. Norman Henry, Pennsylvania, the advantages of Philadelphia.

The Speaker declared the nominations closed.

The Secretary announced that, of 124 votes cast, Atlantic City received 50 and Philadelphia 74.

The Speaker declared Philadelphia the place for the next annual session of the American Medical Association, as it had received a majority of the votes cast.

On motion of Dr. W. B. Stewart, New Jersey, seconded by Dr. Philip J. Marvel, New Jersey, and carried, Philadelphia was made the unanimous choice of the House of Delegates.

UNFINISHED BUSINESS

Dr. Arthur T. McCormack, Kentucky, moved that the thanks and gratitude of the House be extended to the Michigan State Medical Association and the Wayne County Medical Society, as hosts, and to their wives and the members of the auxiliaries of these two organizations for their gracious and generous entertainment, and that the especial gratitude of the Association be extended to the press of Detroit and Michigan and to the Associated Press, and to those great newspapers that had special correspondents present who had so ably presented to the country the deliberations of this body.

The motion was seconded by Dr. Mather Pfeiffenberger, Illinois, and carried.

Address of Vice President Louis J. Hirschman

The Speaker presented the Vice President, Louis J. Hirschman, who spoke as follows:

Mr. Speaker and my Friends of the House of Delegates:

As a former and reformed delegate, I can appreciate what a difficult problem it is when you have once in a while to elect a man unanimously. Half the fun in being in the House of Delegates is to have a fight. I assure you that I appreciate very much the honor that you have bestowed upon the city of Detroit by electing one of the Detroit men to fill the very onerous and difficult duties of Vice President. I have had a lot to do with vice and I have been vice a good many times, and I will do everything in my power to carry through, and I assure you that I hope I will not be called on to perform the duties of my office.

Dr. Arthur T. McCormack, Kentucky, moved that the thanks of the House be extended to the Speaker for his eminently fair rulings and the splendid manner in which he had conducted the business of the House.

The motion was seconded by several delegates and carried.

The House of Delegates adjourned sine die at 4:20 p. m.

REGISTRATION AT DETROIT

The total registration at the Detroit session was 5,104. Below are given two summaries—one by sections and one by states:

REGISTRATION BY SECTIONS

Practice of Medicine	1,592
Surgery, General and Abdominal	879
Obstetrics, Gynecology and Abdominal Surgery	376
Ophthalmology	299
Laryngology, Otology and Rhinology	314
Diseases of Children	298
Pharmacology and Therapeutics	39
Pathology and Physiology	147
Nervous and Mental Diseases	142
Dermatology and Syphilology	148
Preventive and Industrial Medicine and Public Health	167
Urology	157
Orthopedic Surgery	150
Gastro-Enterology and Proctology	121
Radiology	193
Miscellaneous	82
Total	5,104

REGISTRATION BY STATES

Alabama	24	Nevada	2
Arizona	10	New Hampshire	4
Arkansas	20	New Jersey	35
California	96	New Mexico	3
Colorado	38	New York	351
Connecticut	39	North Carolina	10
Delaware	4	North Dakota	8
District of Columbia	62	Ohio	579
Florida	23	Oklahoma	42
Georgia	26	Oregon	12
Idaho	4	Pennsylvania	292
Illinois	429	Rhode Island	3
Indiana	208	South Carolina	16
Iowa	88	South Dakota	8
Kansas	28	Tennessee	52
Kentucky	70	Texas	111
Louisiana	30	Utah	6
Maine	4	Vermont	5
Maryland	51	Virginia	43
Massachusetts	97	Washington	25
Michigan	1,627	West Virginia	38
Minnesota	104	Wisconsin	78
Mississippi	8	Wyoming	2
Missouri	120	Foreign	108
Montana	9		
Nebraska	52	Totals	5,104

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

License Revoked.—At the meeting of the State Medical Board of the Arkansas Medical Society, May 13-14, the license of Dr. J. C. Tompkins, Camden, was revoked on the grounds of his having been convicted in court of a crime involving moral turpitude.

CALIFORNIA

Wanted—Blood of Recovered Poliomyelitis Cases.—Hooper Foundation for Medical Research of the University of California Medical School will pay $10 per hundred cubic centimeters of blood from persons who have recovered from attacks of acute anterior poliomyelitis. The blood is needed to make serum to be used in the treatment of other cases of this disease. Individuals who may desire to contribute blood should communicate with K. F. Meyer, Ph.D., at the Hooper Foundation for Medical Research, Parnassus Avenue, San Francisco. Health officers are urged to watch the poliomyelitis situation. According to the state department of health, the number of cases for the week ended June 7 was thirty-one, as compared to three for the week ended June 8, 1929.

DISTRICT OF COLUMBIA

Outbreak of Typhus Fever.—A moderately mild epidemic of typhus fever now exists in the Washington area, according to the Washington *Post*. The disease was brought to the attention of health authorities by the case of a 5-year-old boy at Fort Humphreys, Va., where 150 of the Reserve Officers Training Corps from various universities are in camp. Seven persons were afflicted and one died at his home on the outskirts of Alexandria. Other cases are distributed in Maryland: one each in Anne Arundel, Charles, Cecil and Howard counties, and two in Kent County. The death in this epidemic was said to be the first in the region due to typhus in many years. Scattered cases were reported in 1928 in Virginia, and Baltimore had six cases in 1919-1920.

ILLINOIS

Society News.—The Alexander County Medical Society was addressed, May 23, in Cairo, by Drs. James S. Johnson on "Infected Lateral Sinus Thrombosis Without Mastoid Involvement"; James M. McManus, "Hernia Following Cholecystectomy"; James M. Gassaway, "Unusual Features in Scarlatina in an Adult," and James K. Rosson, Tamms, "Two Brothers of 11 and 5 Years with Progressive Muscular Dystrophy."

Chicago

Medical Diploma Lost.—The medical diploma of Dr. Lloyd Finley Teter, Chicago, issued by Loyola University School of Medicine, Chicago, June 11, 1930, has been lost. The school has issued a duplicate to Dr. Teter and in case the original is found, the medical school should be notified.

INDIANA

Society News.—The Tippecanoe County Medical Society was addressed, recently, by Dr. Arlie R. Barnes, Rochester, Minn., on coronary occlusion and myocardial infarction.——Dr. Samuel H. Havice, who has been practicing medicine in Fort Wayne for the last thirty-eight years, was tendered a birthday dinner, April 15, by the Allen County Medical Society.——The Eleventh Councilor District Medical Association was addressed, May 15, at Kokomo, among others, by Dr. Stanley M. Casey, Huntington, on "The Treatment of Eclampsia."——Dr. Harold S. Hatch, Indianapolis, conducted a tuberculosis clinic before the Wabash County Medical Society, June 5, at Wabash.——The Gibson County Medical Society was addressed at Princeton, June 9, by Drs. Martin L. Arthur, Patoka, on "Gastric and Intestinal Disturbances of Childhood" and Osborne T. Brazelton, Princeton, "Major Fractures," with a demonstration of an improved airplane splint for shoulder joint.——"Gallbladder Surgery" was the subject of Dr. Thomas B. Noble, Jr., Indianapolis, before the Hamilton County Medical Society, June 10, at Noblesville.——Dr. Arthur M. Mendenhall, Indianapolis, addressed the Fountain-Warren County Medical Society, June 5, at Covington on "Newer Developments in

Obstetrics."—The Tippecanoe County Medical Society was addressed at Lafayette, June 12, by Dr. Donald C. McClelland on "Treatment of Uterine Hemorrhage with X-Ray and Radium."——Drs. Ernest V. Nolt and Otto C. F. Lehmberg addressed the Whitley County Medical Society at Columbia City, June 10, on "Streptococci Infections" and "Erosion of Cervix Uteri," respectively.——William J. Moenkhaus, Ph.D., Bloomington, addressed the Wayne-Union County Medical Society at Richmond, June 12, on "The Sympathetic Nervous System."——Dr. Justin M. Waugh, Cleveland, addressed the Lake County Medical Society at Gary, June 12, on "Relation of the Otolaryngologist to the General Practitioner."——"Thyroid Disease, Acute and Chronic," was the subject of Dr. Goethe Link, Indianapolis, before the Hancock County Medical Society, May 22.——Drs. Charles F. Adams and John R. Brayton addressed the Hendricks County Medical Society at Danville, June 19, on "Work of State Laboratory" and "Syphilis," respectively.

IOWA

Personal.—Dr. Walter R. Fieseler, formerly medical supervisor of athletics at the University of Iowa, has resigned from the faculty of the college of medicine to become associate medical director at the University of Southern California next fall.——Dr. Leo J. Miltner, Iowa City, was expected to sail in June to occupy a position in Peiping, China.——Dr. Frank M. Keefe, Clinton, has been appointed district surgeon of the Northwestern Railway to succeed the late Dr. David S. Fairchild, Sr. Dr. Keefe had been an assistant for fifteen years.

Society News.—The Des Moines Valley Medical Society was addressed, June 17, at Ottumwa, among others, by Drs. Ira H. Lockwood, Kansas City, Mo., on "Radiation in Carcinoma of the Breast," and Isaac Y. Olch, St. Louis, "Chronic Cystic Mastitis and Its Relation to Carcinoma of the Breast."——Drs. Oliver J. Fay, Des Moines, addressed the Cerro Gordo County Medical Society, May 20, on "Evaluation of Cerebral Concussion in Industries"; Floyd O. Woodard, Des Moines, "Anatomy of the Brain," and Walter D. Abbott, Des Moines, "Injuries of the Brain."——The Fayette County Medical Society was addressed, May 12, in Oelwein, by Drs. John A. Cahill, Volga City, and Dell W. Ward, Oelwein, on "Injuries and Care of the Shoulder" and "Injuries to the Knee," respectively.——The Lucas County Medical Society was addressed at Chariton, May 7, by Drs. Mark L. Underwood on "Care of the Ex-Service Men and Women by the U. S. Veterans' Bureau"; Ward W. Hedlund, "History of Mental Diseases," and Charles M. Schiek, Knoxville, "Diagnosis of Various Types of Psychosis."——"Endometriosis of the Abdominal Wall" was the subject of Dr. Henry E. Kleinberg, Des Moines, before the Polk County Medical Society, May 27, and "Modern Advances in the Physiology of Respiration and Their Application to the Explanation of Clinical Symptoms."——Dr. John I. Marker, Davenport, addressed the Washington County Medical Society, May 6, on "Mental Diseases."——The Webster County Medical Society was addressed, May 20, by J. H. Shore, D.V.M., of the Fort Dodge Serum Company, on "Infectious Abortion Disease of Domestic Animals."——Dr. Thomas R. Gittens, Sioux City, addressed the Woodbury County Medical Society, May 28, on "Relation of Bronchoscopy and Esophagoscopy in Diseases of the Chest," illustrated.——Dr. Charles Singer, London, England, addressed the Des Moines Academy of Medicine, May 26, on "Scientific Change from the Medieval to the Modern."——The Four Counties District Medical Association (Buena Vista, Cherokee, Ida and Plymouth) was addressed, May 20, by Drs. Samuel F. Haines, Rochester, Minn., on "Diagnosis of Exophthalmic Goiter"; Alfred H. Jastram, Remsen, "Some Glimpses of Modern Science," and John S. Tracy, Storm Lake, "Treatment of Varicose Veins."

KANSAS

Brinkley on the Air.—The action of the Federal Radio Commission in discontinuing the radio station KFKB at Milford has been suspended temporarily pending an appeal by the station authorities to the Court of Appeals of the District of Columbia. (THE JOURNAL, June 21, p. 2005.)

MAINE

State Medical Election.——At the annual meeting of the Maine Medical Association, June 4, Dr. Charles B. Sylvester, Portland, was installed as president, and Dr. John Sturgis, Auburn, was made president-elect, and Dr. Philip Webb Davis, Portland, secretary. The next annual session will be held at Greenville.

MARYLAND

Dr. Doull Goes to Western Reserve.—Dr. James Angus Doull of the School of Hygiene and Public Health of Johns Hopkins University School of Medicine has been appointed professor and head of the department of hygiene and public health at Western Reserve University School of Medicine, Cleveland, to succeed Dr. Roger G. Perkins who retires. Dr. Doull has been at Johns Hopkins since 1921. He will take up his new duties at Western Reserve in September.

Personal.—Dr. Ferdinand O. W. Reinhard has been placed in charge of the bureau of communicable diseases, Baltimore City Health Department; he will act as head of the bureau until Dr. Daniel S. Hatfield recovers from the effects of an attack of psittacosis which followed his investigations of the outbreak of the disease in Baltimore last winter; Dr. Calvin Hyman has been appointed health officer at large to succeed Dr. Reinhard.——Dr. John Rathbone Oliver, medical adviser to the courts in Baltimore, has submitted his resignation to the judges after twelve years' service in view of his appointment as associate professor of medical history at Johns Hopkins University School of Medicine, effective October 1.

MASSACHUSETTS

Society News.—The work of hospital libraries was discussed, June 6, at the Northeastern Library Convention at Swampscott. Miss Ida M. Cannon, head of social service work at the Massachusetts General Hospital, gave a summary of twenty-five years of dispensary and social service which was originated in this country by Dr. Richard C. Cabot, Boston.

State Medical Election.—At the annual meeting of the Massachusetts Medical Society at Plymouth, June 17, Dr. Robert B. Greenough, Boston, was elected president; Dr. Thomas H. McCarthy, Brockton, vice president; Dr. Walter L. Burrage, Brookline, secretary, and Dr. Arthur K. Stone, Framingham Center, treasurer. The next annual meeting of the society will be held in Boston, June 8-10, 1931.

MICHIGAN

Society News.—Dr. Hiram Byrd addressed the East Side Physicians' Association, June 12, at Detroit; Dr. Alfred H. Whittaker was elected president at this meeting.——Dr. Dalton K. Rose, St. Louis, addressed the Kalamazoo Academy of Medicine, June 17, on "Differential Diagnosis of Hypertrophied Prostate and Neurogenic Bladder."

Licenses Revoked.—The license of Dr. Joseph Henry Hanson, Detroit, was revoked at a meeting of the Michigan State Board of Registration in Medicine, June 11, at Ann Arbor, effective June 13, on charges of unprofessional conduct. The specific charge was accepting a fee to cure an incurable disease. The license of Dr. Bion Whelan, Hillsdale, was revoked at the same time; he had been convicted on a narcotic charge.

New Committee to Direct Medical School.—At a recent meeting of the board of regents, the appointment of a new executive committee to govern the University of Michigan Medical School was approved. The directorship of the division of preclinical medicine will go to Dr. Frederick G. Novy, head of the bacteriology department and a member of the old executive committee. Graduate medicine will be under the supervision of Dr. James D. Bruce, present supervisor of the work. Clinical medicine will be directed by Dr. Udo J. Wile of the dermatology and syphilology department. Dr. Harley A. Haynes will have complete direction of the University Hospital, and Dr. Arthur C. Curtis, former assistant to the dean of the medical school, now becomes secretary. The new arrangement will cancel the system which has been in use since February. Dr. Hugh Cabot is said to have left the university at the end of June.

MISSOURI

Society News.—Dr. Charles P. Coogle of the U. S. Public Health Service addressed the full-time health officers of Southeast Missouri and members of the staff of the state board of health, May 5, at Cape Girardeau, on malaria control.——Dr. Russell L. Haden, Kansas City, has been appointed to the staff of the Crile Clinic at Cleveland, Ohio.

Fund for Institute for the Deaf.—The General Education Board of the Rockefeller Foundation has granted a fund of $25,000 a year for five years to the Central Institute for the Deaf, St. Louis. The fund will be used for educational research. A principal activity of the institute is the training of teachers for the deaf and defective in speech, and this appropriation helps to make possible the founding of a national teachers' college for this work.

Licenses Revoked.—At a meeting of the State Board of Health of Missouri in St. Louis, June 11, the license of Dr. William R. Harman was revoked on the ground that he was guilty of unprofessional and dishonorable conduct in that he produced a criminal abortion in October, 1929. Dr. Robert Lentine's license to practice medicine and surgery was also revoked on the ground that he was guilty of unprofessional and dishonorable conduct and was of bad moral character in that he on or about March 3, 1930, violated the criminal statute of the state of Illinois relating to the unlawful sale of diplomas for the practice of medicine.

NEW YORK

Society News.—Dr. George F. Chandler, Kingston, addressed the Medical Society of the County of Albany, June 27, on "Medical Economics."——The Franklin County Medical Society was addressed at Saranac Lake, June 11, by Drs. David T. Smith, Ray Brook, on "Vitamins in Their Relation to Disease," and W. H. Frederick McKee, Saranac Lake, "Injection Treatment of Varicose Veins."

Survey of Rural Physicians.—In a recent survey made by the Albany Medical College, department of regional extension of medical education, recently established, of physicians in more than 200 rural communities, it was found that 37 per cent are 60 years of age or over. The average age of active doctors is 53 years. Eleven per cent of physicians in eighteen counties are inactive because of age, retirement or ill health. It is the purpose of the college to study means by which it may be of greater service in aiding physicians to meet the problems in country work.

New York City

Floating Hospital Opens.—The Seaside Hospital on Staten Island, which is maintained by St. John's Guild, a nonsectarian organization, was opened on May 19. It accommodates 190 children who are admitted after examination by physicians from various New York hospitals. The Floating Hospital opened, July 1. It provides for 1,200 children and their mothers, a staff of twenty-three nurses and two physicians headed by Dr. Helen Harrington. The older children will leave the boat when it docks at five o'clock, but during the day are to be examined and treated by the free clinic on board. The average length of stay at Seaside Hospital is nineteen days. Attention is given to the condition of their teeth and roentgen and bacteriologic examinations are made. The chief medical officer is Dr. Winfred Morgan Hartshorn. In 1887, twelve years after the first trip of the Floating Hospital, Seaside Hospital was inaugurated. Since that time it has cared for 72,566 children, while the Floating Hospital has given trips and treatments to 2,114,021 children and mothers, a total of 2,186,587 patients. The Guild is supported entirely by public contributions.

OHIO

Changes at Western Reserve.—The following appointments have recently been announced at Western Reserve University School of Medicine, Cleveland:

Dr. Roger Griswold Perkins, professor emeritus of hygiene and preventive medicine.
Harry Alexander Blair, Ph.D., instructor in biophysics for two years.
Donald Eaton Gregg, Ph.D., instructor in physiology for two years.

PROMOTIONS

Dr. Abram B. Bruner, associate clinical professor of ophthalmology for five years.
Dr. John A. S. Gammel, assistant clinical professor of dermatology for three years.
Dr. John E. Rauschkolb, assistant clinical professor of dermatology for three years.
Dr. Walter B. Rogers, assistant clinical professor of surgery for three years.
Dr. Marion D. Douglass, Jr., assistant professor of gynecology for three years.
Dr. Norman C. Wetzel, assistant professor of pediatrics for three years.

OKLAHOMA

State Medical Election.—At the annual meeting of the Oklahoma State Medical Association at Shawnee, May 26-28, Dr. Edmund S. Ferguson, Oklahoma City, was installed as president; Dr. H. C. Weber, Bartlesville, was made president-elect, and Dr. Claude A. Thompson, Muskogee, was reelected secretary-treasurer. The next annual session will be held at Oklahoma City in 1931.

Society News.—The Garfield County Medical Society was addressed at Enid, May 22, by Drs. William P. Neilson and Paul B. Champlin on "Rational Development of Medicine" and "Pancreatic Fistula with Spontaneous Healing," respectively.——Drs. Marvin E. Stout and John A. Roddy, both of Oklahoma City, addressed the Okmulgee-Okfuskee County Medical Societies, May 19, at Okemah, on "Appendicitis in Children" and "Chorea, Chronic Cardiac and Rheumatic Conditions," respectively.

TENNESSEE

Personal.—Dr. William K. Sheddan, Columbia, was awarded a silver loving cup by the Middle Tennessee Medical Association for having the best attendance record of any member of the association. He is said to have missed only two meetings since the society was organized.——Dr. Waller S. Leathers, professor of preventive medicine and dean of the Vanderbilt University School of Medicine, Nashville, has accepted the appointment to membership on the board of scientific directors of the International Health Division of the Rockefeller Foundation.——Dr. Li Huo Ou, Shanghai, arrived in Nashville, June 5, to make a study of the county health work and the administrative program of the Tennessee Department of Health.

Health at Memphis.—Telegraphic returns to the U. S. Department of Commerce from sixty-five cities with a total population of thirty million, for the week ended June 21, indicate that the highest mortality rate (22.2) appears for Memphis, and the mortality rate for the group of cities as a whole was 11.4. The mortality rate for Memphis for the corresponding week last year was 18.4, and for the group of cities, 12.1. The annual rate for sixty-five cities was 13.5 for the twenty-five weeks of 1930, as against a rate of 14.6 for the corresponding weeks of 1929. Caution should be used in the interpretation of weekly figures, as they fluctuate widely. The facts that some cities are hospital centers for large areas outside the city limits, or that they have a large negro population, may tend to increase the death rate.

VIRGINIA

Changes at Medical College of Virginia.—The following faculty additions were recently announced at the Medical College of Virginia:

Dr. Isaac A. Bigger, professor of surgery.
Dr. Goldsborough F. MacGinnes, associate in preventive medicine.
Dr. Harry G. Grant, associate in preventive medicine.
Dr. Allan L. McLean, associate in preventive medicine.
Dr. Blake W. Meador, associate in dermatology and syphilology.
Dr. James Asa Shield, associate in nervous and mental diseases.

The following promotions of faculty members are also noted:

Dr. Joseph Bear, to assistant professor of obstetrics.
Dr. James G. Lyerly, to professor of oral surgery.
Dr. Robert S. Preston, to assistant professor of medicine.
Dr. Harry B. Sanford, to associate in obstetrics.
Dr. Clifford W. Skinner, to associate professor of anatomy.
Dr. Daniel D. Talley, Jr., to associate professor of roentgenology.
Dr. John Powell Williams, to associate in medicine.

WASHINGTON

Personal.—Dr. Henry Storgaard, health officer, since 1927, of the city and county of Yakima, has resigned to enter private practice, effective September 1.——Dr. Lorenzo Walter has been appointed flight surgeon and commanding officer, it is reported, of the 116th medical detachment of the forty-first division air service unit, Washington National Guard.

Society News.—A symposium on hospitalization of the American Indian was held before the Washington Tuberculosis Association at Winthrop, June 12-14. Among the speakers were Dr. John N. Alley, Tacoma, and John Weinzirl, Dr. P. H. of the University of Washington, Seattle.——The Pierce County Medical Society was addressed, May 13, at Tacoma, by Drs. Christen Quevli, Jr., Tacoma, and Guy Shearman Peterkin, Seattle, on "Value of Fluoroscopy in Diseases of the Heart and Blood Vessels" and "A Study in Contraceptives as Viewed from a Study of European Conditions," respectively.——The Klickitat-Skamania County Medical Society was addressed at Goldendale, May 15, among others, by Drs. Frank R. Menne, Portland, Ore., on the nature and origin of cancer, and Robert L. Benson, Portland, Ore., "Asthma, a Hopeful Disease." All officers of the society were reelected for the ensuing year.

GENERAL

Society News.—Dr. Arnold Knapp, New York, was installed as president of the American Ophthalmological Society at its annual meeting, June 2; Dr. Edward C. Ellett, Memphis, Tenn., was made president elect, and Dr. Emory Hill, Richmond, Va., secretary, reelected.——Dr. Richard C. Cabot, Cambridge, Mass., was elected president of the National Conference of Social Work at its recent annual meeting.

Tuberculosis Congress in Hamburg.—The Northwest German Tuberculosis Association will hold its summer meeting in Hamburg, August 7-8. The program will include a discussion of "Nutritional Therapy in Tuberculosis," "Manifestations

Assumed by Tuberculosis During Its Development" and "Various Aspects of Pulmonary Disease" under the chairmanship of Prof. Otto Ziegler, Hanover. During the congress, the German Research Institution for Tuberculosis will consider the subjects of "Variations in the Shape, Development and Virulence of the Tuberculosis Bacillus"; "Surgical Treatment of Nontuberculous Pulmonary Disease"; "Demonstration of Electrobronchography as Regards Its Theoretical and Practical Application" and "Asthma." This meeting will be confined to those who intend to take part in the forthcoming International Tuberculosis Congfess at Oslo. Further details may be secured from Professor Brauer, Hamburg, or Prof. Otto Ziegler, Hanover.

Four Weeks of Automobile Fatalities.—The U. S. Department of Commerce announces that during the four weeks ending June 14, seventy-eight large cities in the United States reported 647 deaths from automobile accidents as compared with 603 deaths during the four weeks ending June 15, 1929. Most of these deaths were the result of accidents which occurred within the corporate limits of the city, although some accidents occurred outside of the city limits. Considering by four-week periods since May, 1925, total deaths from automobile accidents for seventy-eight cities, the lowest total (346) appears for the four-week period ending March 27, 1926, and the highest (842) for the four-week period ending Nov. 2, 1929. For the fifty-two week periods ending June 14, 1930, and June 15, 1929, the totals for the seventy-eight cities were, respectively, 8,744 and 7,800, which indicate a recent rate of 26.6 per hundred thousand population as against an earlier rate of 23.7, or an increase of 12 per cent in the rate in a single year. The five cities that reported no deaths from automobile accidents were Duluth, Minn., Kansas City, Kan., Memphis, Tenn., New Bedford, Mass., and Yonkers, N. Y.

Medical Bills in Congress.—S. 174, establishing a branch home of the National Home for Disabled Volunteer Soldiers in one of the Southern states, has been signed by the President (Public Law 405). S. 255, the Jones maternity and infancy bill, was reached on the Senate Calendar, June 27, but Senator Phipps, Colorado, prevented consideration of the bill. S. 1721, directing the retirement of acting assistant surgeons of the United States Navy at the age of 64 years, has passed the House. S. 2414, authorizing the United States to participate in the International Hygiene Exhibition at Dresden, has been signed by the President (Public Law 408). H. J. Res. 253, providing for the expenses of a delegation of the United States to the sixth meeting of the Congress of Military Medicine and Pharmacy to be held at Budapest, 1931, has been passed by the Senate, with an amendment. H. J. Res. 367, amending the Porter Narcotic Act so as to make it effective July 1, 1930, has passed the House and Senate. H. R. 3395, authorizing the Commissioner of Narcotics to pay for information concerning violations of the narcotic laws of the United States, has passed the Senate, with amendments. H. R. 6340, authorizing an appropriation for construction of an addition to the hospital at the Mountain Branch of the National Home for Disabled Volunteer Soldiers, Johnson City, Tennessee, has passed the Senate. H. R. 9638, establishing a branch home of the National Home for Disabled Volunteer Soldiers, in one of the Northwest Pacific states, has been reported in the Senate, without amendment (Report 1090). H. R. 10375, providing for the retirement of disabled nurses of the Army and Navy, has been signed by the President (Public Law 401). H. R. 10381, proposing to amend the World War Veterans' Act, has been vetoed by the President and the House has sustained the veto. H. R. 12902, the Second Deficiency Appropriation bill, has been amended in the Senate to provide an appropriation of $100,000 to enable the United States Public Health Service to conduct a survey in connection with the control of cancer. H. R. 13174, proposing to amend the World War Veterans' Act, has been passed by the House. The bill, among other things, provides that due regard shall be given to lay and other evidence not of medical nature in considering claims and sets up a system of pensions for veterans suffering from disabilities not of service origin.

PHILIPPINE ISLANDS

Leonard Wood Hospital Opened.—The Leonard Wood Hospital at Cebu, the gift of Eversley Childs of New York, was opened, April 20. The hospital comprises fifty-five concrete structures, which will house 700 patients and care for an adequate staff. One unit contains the administration building, clinic rooms, doctors' and nurses' quarters, visiting rooms and treatment hospital. Space has been reserved for the use of families, all of whose members need treatment and who wish to erect private homes within the limits of the settlement. The wards will accommodate from eight to twenty-four patients. The construction is of bamboo and concrete. Strips of bamboo are woven into mats and are tied with bamboo thongs into forms for concrete; the pouring is made on both sides of the form, and the bamboo mat replaces the usual steel or iron reinforcement. The roofs are of poured concrete, set on a bamboo mat, and they are about four inches thick. This type of building has great heat resistance. All the dormitories have been further heat insulated by an inside wall covering of a heat resisting cocoanut-fiber product. The building is also fireproof. Every inch of the building can be scrubbed. These buildings appear like attractive concrete bungalows, set in avenues of palms, for the enjoyment rather than the confinement of their inmates. The entire cost was $180,000.

FOREIGN

School of Tropical Medicine in Sydney.—The new School of Public Health and Tropical Medicine was opened in Sydney, March 6. It will carry on the work of the School of Tropical Medicine, which has been in existence since 1907 at Townsville. It is housed in its own building with the grounds of the University of Sydney, close to the medical school. Erected at a cost of £35,000, it provides for departments of parasitology, entomology, bacteriology, pathology and chemistry, while sections dealing with physiology, industrial hygiene, epidemiology, vital statistics and sanitary engineering are contemplated. It will be under the control of a council composed of representatives of the commonwealth government and the University of Sydney. Dr. Harvey Sutton has been appointed director. It will provide especially for the graduate training of public health personnel but will also include special nonmedical courses of school hygiene in the diploma of education and of tropical hygiene in the diploma of anthropology. The courses for the diploma in public health and for the diploma in tropical medicine have already been commenced, and a diploma of tropical hygiene is contemplated. A library to deal with public health and tropical medicine is being built up from a nucleus, previously existing at Townsville, which, it is hoped, will be complete in all Australian aspects.

Society News.—Dr. Samuel A. Kinnier Wilson delivered the Morison lectures at the Royal College of Physicians and Surgeons of Edinburgh, June 2-4, on "Nervous Semeiology."——Dr. Leybourne Stanley Patrick Davidson has been appointed to the regius chair of medicine in the University of Aberdeen to succeed Prof. Ashley Watson Mackintosh, resigned.——The sixth International Congress for Accident Surgery and Labor Medicine will be held in Geneva, Switzerland, August, 1931. Among the subjects to be discussed are "Slow Results and Evolution of the Traumatic Wounds of the Spine"; "Traumatism of Blood Vessels (Arteritis and Thrombophlebitis)" and "Cutaneous Affections in Relation with Labor Accidents." An exposition of roentgenograms, photographs and moldings will be held; for information about the exposition address Dr. Jentzer, Geneva, rue de l'Université 8. The general secretary is Dr. Yersin, 3, rue de la Monnaie, 3, Geneva.——The eighth general meeting of the Union Japanese Medical Society, April 1-5, was addressed at Osaka, among others, by Professor Bulney on "Leprosy," Professor Anikoff, "Arteriosclerosis." The Japanese Pathological Society was addressed at this time by Dr. A. Jufinami on "The Pathological Study on Chicken Sarcoma and Tumors." The Union Surgical Society was addressed by Drs. J. Iwanaga on "Surgery of the Intestinal Tuberculosis"; E. Arima, "Artificial Pneumothorax Therapy of Pulmonary Tuberculosis," and N. Ishikawa, "Surgery of Pulmonary Tuberculosis."

CORRECTIONS

Blastomycosis of the Prostate Gland.—In an article in THE JOURNAL, June 21, Drs. Bransford Lewis, Grayson Carroll and Garold V. Stryker state that the case there reported is the only case of blastomycosis of the prostate gland reported. The authors now write that blastomycotic abscesses of the prostate gland in four patients were reported in the *Archives of Internal Medicine* for April, 1914, by Dr. A. M. Stober, in an article entitled "Systemic Blastomycosis."

Behavior of Mercury in the Body.—At the bottom of page 1921 in THE JOURNAL, June 14, the sentence, "Obviously, prolonged administration of mercury, especially when the subject is on an alkaline diet, results in the deposit in the body of a large amount of mercury, which may be released suddenly by any reaction that lowers the hydrogen ion concentration of the blood or tissues," is erroneous. The latter part should read: "which lowers the p_H, or which increases the hydrogen ion concentration of the blood or tissues."

Government Services

Change of Station in the Navy

The following changes of station have been announced: Lieut. Comdr. Clarence J. Brown to the U. S. S. *Milwaukee;* Lieut. Colvin B. Childs to the second brigade, U. S. Marines, Nicaragua; Lieut. Comdr. Robert H. Collins to the U. S. S. *Aroostook,* about July 3; Lieut. Comdr. Claude R. Riney, about June 22, to the U. S. S. *Cuyama;* Lieut. Thomas F. Duhigg to the navy recruiting station, Boston, about July 27; Capt. Harry A. Garrison to the Navy War College, Newport, R. I., about June 25; Lieut. Raymond W. Hege to the navy air station, San Diego, Calif.; Capt. David C. Cather has been transferred from the submarine base, Coco Solo, C. Z., to the Navy War College, Newport, R. I.; Lieut. Comdr. John F. Hart to duty involving flying, Navy Air Station, San Diego, Calif.; Lieut. Rob R. Doss from the navy hospital, Annapolis, Md., to the Asiatic Station, about August 17; Lieut. Robert M. Gillett from the navy hospital, New York, to Asiatic Station, about August 17; Capt. Robert E. Stoops from command of the naval hospital, Parris Island, S. C., to the submarine base, Coco Solo, C. Z.; Lieut. Comdr. George L. McClintock to the U. S. S. *Langley,* which duty will involve flying; Lieut. Walter F. J. Karbach from the naval hospital, Norfolk, Va., to the Asiatic Station; Lieut. O. Henry Alexander from the naval hospital, Mare Island, Calif., to the Asiatic Station, effective September 24; Lieut. Clarence C. Myers to the U. S. S. *Whitney,* effective about July 25.

The Government Needs a Bacteriologist

The U. S. Civil Service Commission announces a competitive examination for associate bacteriologist. Applications must be on file with the commission at Washington, D. C., not later than July 30. The examination is to fill a vacancy in the position of clinical laboratorian, U. S. Veterans' Bureau Hospital, Palo Alto, Calif., and vacancies occurring in positions requiring similar qualifications throughout the United States. The entrance salaries range from $3,200 to $3,700 a year; higher-salaried positions are filled through promotion. The duties are to direct technical work of the clinical laboratory; to supervise and to perform individually technical work in pathology, bacteriology, serology, chemistry and research, and to act in a consulting capacity with the staff on scientific matters in the absence of the pathologist. Competitors will not be required to report for examination at any place, but will be rated on their education, training and experience, and on a thesis or publication on some subject related to bacteriology or pathology. Information may be obtained from the U. S. Civil Service Commission at Washington, D. C., or the secretary of the U. S. Civil Service Board of Examiners at the postoffice or customhouse in any city.

Army Personals

Lieut. Roland K. Charles is assigned to duty at Fort Bragg, North Carolina.——Major Clive P. Mueller is assigned to duty at Brooklyn, effective about August 1.——Major Charles H. Haberer, having been found by an army retiring board incapacitated for active service on account of disability incident thereto, and such finding having been approved by the President, the retirement of Major Haberer from active service is announced.——Major Frank W. Wilson will sail from San Francisco about August 9 for duty in the Hawaiian Department.——Capt. Edward J. Kallus, San Francisco, will sail for New York about August 30, and on arrival will proceed to Walter Reed General Hospital, Army Medical Center, Washington, D. C., for duty.——Major Benjamin B. Warriner will proceed to Brooks Field, Texas, about September 1, and report to the commanding officer for duty as commandant, school of aviation medicine.——Major Chauncey L. Chase will proceed to Mitchel Field, Long Island, N. Y., about September 12, for duty.——Major Francis H. Poole will proceed to March Field, California, about September 5, for duty.——Major Wayne R. Beardsley will proceed to his home via the Panama Canal and await retirement, for the convenience of the government.——Major William R. Campbell will proceed to Omaha, Neb., and report to the commanding general, seventh corps area, for duty, effective about August 1.——Major Clinton L. Hoy will proceed to his home about July 29 and await retirement, for the convenience of the government.——Lieut. Col. William A. Wickline will sail from New York for San Francisco about August 12 and report to the commanding officer, San Francisco general depot, Fort Mason, for duty.

Foreign Letters

LONDON

(From Our Regular Correspondent)

June 7, 1930.

American Students in British Medical Schools

The reform of medical education in the United States has produced a curious repercussion in this country. The extinction of inferior medical schools has led to severe pressure on the accommodation of some of the remaining schools with the result that hundreds of American students who are unable to take the curriculum in America are applying to British schools and furnishing a new and difficult problem for our medical authorities. It is exercising the General Medical Council. A committee of the council has presented a report on the applications of American students to study medicine in Great Britain and Ireland. The report divides them into four classes: 1. Those who propose to take the whole of their instruction in this country and who therefore must go through exactly the same curriculum as our own students. 2. Those who, following a different arrangement from our curriculum, have attended a college of literal arts and there studied, in addition to literary subjects, biology, chemistry and physics. The question of recognition of these courses arises. 3. Those who have studied at an approved medical college for one or two years and having left for various reasons desire to complete their course and qualify in this country. 4. Those who have passed the earlier examinations for the diploma of the National Board of Medical Examiners of the United States. This board has a special reciprocal arrangement with the British boards under which mutual recognition is accorded to their corresponding examinations. The difficulties confronting our deans and registrars are practically confined to classes 2 and 3. Any school of medicine has the power to admit any student it pleases, but the number of applications and the difficulty of evaluating the evidence of the curriculum which the students present make the laying down of some common plan of action desirable. Fortunately there are in the United States voluntary associations, such as the Council of Medical Education and Hospitals of the American Medical Association, the Association of American Medical Colleges, the National Board of Medical Examiners and the Federation of State Boards, which have established themselves in the confidence of their own people and who are willing to cooperate with us in securing a general scheme acceptable to us both. The report quotes a letter, dated May 12, 1930, from Dr. Ray Lyman Wilbur to Dr. Gray of the American University Union as summing up the American standpoint: "I am very much in favor of a certain percentage of our students studying abroad, but I think they should be from our better students and should not belong to the inferior group." This view is also taken on the British side.

The registrar of the council has submitted to the committee a memorandum stating that in the absence of authentic information it is difficult to assess the value of the certificates of general education which have been forwarded and also of the evidence of having passed an examination equivalent to our preregistration examination in elementary physics and chemistry. Some students who have taken a part of their course at reputable American institutions have obtained "honorable dismissal." The matter is further complicated by the fact that there is an arrangement between the conjoint boards in this country and the National Board of Medical Examiners in America, whereby those who have passed the examination of the one may be admitted without question to examination by the other. If students who for some reason or other are not considered acceptable in America can come to this country and

obtain a qualification, which it is understood carries considerable weight in America, and then go back and demand to be allowed to sit for an examination which, if passed, entitles them to practice in about three fourths of the United States, difficulties will arise. Early this year the council adopted the following form of letter for American applicants: "In reply to your letter I have to say that no application from an American student can be considered unless the certificate or transcript of record is endorsed by or accompanied by a statement from the dean of the faculty of medicine of a university, which is a member of the Association of American Universities, to the effect that the holder would be admitted to the faculty." The result was that as a rule little more was heard from most of the applicants. It was pointed out by Dr. W. C. Rappleye of the commission on education organized by the American Medical Colleges, who was present at meetings of the council, that not all the approved schools (formerly designated class A) were members of the Association of American Universities but that all were members of the Association of American Medical Colleges. Therefore the foregoing condition was altered accordingly. It is noteworthy that the problem in one way concerns America more than England, for most of the American students want to return and practice at home. It has been found that "honorably dismissed" means that the student is not up to the scholastic requirements of the school, though there is nothing against his character. It does not seem desirable from the American standpoint that large numbers of such students should by relaxation of regulations be enabled to study in British schools and so enter the American profession.

Sterilization of the Insane

The sterilization of the insane has once again been advocated. The psychiatrist Dr. F. A. Gill, chief medical adviser to the Lancashire asylums board, in a report to that body says: "Sterilization of selected patients of both sexes is desirable before release from mental defective institutions. Sterilization of the recurrent insane is desirable and justifiable both in the interest of the race and as a therapeutic measure which relieves them of the anxiety of child bearing and maintaining a family. The fallacy of the claim for wholesale sterilization lies in the fact that the great majority of certifiable defectives are not the progeny of mentally defective parents but of apparently normal or subnormal yet more or less self-supporting citizens. If every certifiable mental defective had been sterilized twenty or thirty years ago it would have made little difference in the number of defectives existing today. This does not deny the fact that mental deficiency is inherited, nor that the progeny of mental defectives would themselves almost certainly be subnormal, but it does show that mental deficiency cannot be exterminated by sterilizing existing defectives. Among female patients released from Calderstones for a short holiday on trial in situations, four have been brought back pregnant in the last six months. The lesson here is that females of child-bearing age must never be released even on trial. The obvious remedy is sterilization.

The Health of Maori School Children

A report by Dr. H. B. Turbott, health officer of Gisborne, New Zealand, on the health of Maori school children is reassuring for the future of that fine Polynesian race, which has shown itself capable of standing up against the white man as an equal, mentally and physically. He made a careful examination of 1,423 Maori children in his district and compared their health and physique with those of white children. Anemia and heart trouble were more frequent among white children, the incidence being 11.47 and 6.37 per thousand for the white children against 1.40 and 4.91 for the Maoris. Respiratory disease, though small in amount, was more prevalent among the Maoris, the incidence being 30.92 (of which 5.62 were probably tuberculous) and 12.74 (of which none seemed tuberculous) for the whites. Associated with the respiratory trouble among the Maoris was a good deal of indigence with the evils of poor diet and bad housing. Where dairy farming was undertaken some of the children had to work hard. On the whole, the Maori physique proved better than the white; in nutrition, posture and freedom from deformities of the trunk it had a decided advantage. Infectious skin diseases were more common among the Maoris from the practice of sleeping five or six in one bed. But the white children suffered more than they from eczema, seborrhea, ichthyosis and ringworm. Perfect sets of teeth were found in 246 per thousand Maori children against 51 in one thousand whites, but the more the former adopted the diet of the latter the more did their dental superiority vanish. Enlarged tonsils and cervical glands, goiter, phimosis and eye troubles were more prevalent in the white children. Hernia, flat-foot and vulvovaginitis were more common among the Maoris.

PARIS

(From Our Regular Correspondent)

May 28, 1930.

Government Aid to Promote Public Health Work

Recent mortality statistics for France have caused deep regret. The birth rate in France had risen, whereas it was declining in all of Europe. The mortality had begun to drop down somewhat and the whole country was pleased over the fact, when suddenly it began to rise again. From 675,110 in 1928, it rose to 741,104 in 1929, or 70,000 deaths more, in which the deaths of the new-born played but an insignificant part. The increase concerns chiefly the adults. The condition can be due only to the inadequate nature of the public health service, in spite of all the exertions made in this direction. It is becoming more and more clear that the law of 1902 in regard to public hygiene, a law recognized by all as inadequate and which there is constant talk of amending, although nothing is done, is the true cause of this sad state of affairs. The fundamental weakness of the present law, to which frequent attention has been called, is that it leaves to the mayors of the communes the task of applying the hygienic measures that are needed. Unfortunately, however, the authority and influence of the mayor in the majority of the rural communes are entirely inadequate to the needs of the situation. Furthermore, the mayor, being dependent on the voters for his reelection, is not inclined to punish vigorously infractions of the health regulations. Then, again, though the mayor may be honest in his endeavors, many of the communes are too poor to carry out the hygienic measures that are needed; for example, for the installation of a modern water system; or for the care of the indigent or of the mentally ill who have to be transported to the hospitals of the neighboring city. It is in such situations as this that government aid appears to be indicated. But it would require the expenditure of immense sums throughout France if the government were to attempt to do everything for the poorer communes that considerations of health might dictate. However, considerable sums have been appropriated by the government during the past two years to aid the communes, either in the form of subventions or in the form of loans at a low rate of interest, more particularly for the installation of water systems. Hygienic undertakings, which are the next thing in order after the introduction of a water system, may be aided to the extent of 800,000 francs ($32,000) in place of 400,000 francs ($16,000), as formerly. From the foregoing, it would appear unfortunate that improvements in the public health service, on which the lowering of the mortality depends, is a question of finance.

Encephalitis

The Academy of Medicine devoted recently almost an entire session to a discussion of the subject of encephalitis, which continues to manifest itself in a capricious fashion, while its

origin constitutes an enigma. Dr. Aldershoff reported the results of experimental research that he undertook to discover the cause of encephalitis, which, in his opinion, is the same as that of acute poliomyelitis. Whereas these diseases are usually ascribed to filtrable viruses, Aldershoff thinks he has traced the origin to a beaded micro-organism, of the *Monilia* type, which he found in the throat of affected patients. This organism, when inoculated into rabbits and monkeys, caused in them the disappearance of the symptoms and lesions of these two diseases, and the organism could be found later in their brain and spinal cord. This communication was accompanied by projections of microscopic preparations that appeared convincing. If these observations are verified, it will open the way to a new conception of the pathogenesis and will lead possibly to a new method of treatment. The question of postvaccinal encephalitis was again taken up in response to a communication of Dr. Heckman of Rotterdam, who has for some time made a special study of this problem. It is well known that, after vaccination against smallpox or diphtheria, encephalitis sometimes develops. Contrary to the views of the medical commissions of the League of Nations, Heckman and Netter hold that the infection is of a vaccinal nature. To prevent its development, it is well to avoid too active vaccines, especially those obtained by cultivation in the brain of rabbits. The remedy is to administer an intravenous injection of serum or of citrated blood from relatives or from healthy persons recently vaccinated with suitable takes. A recent circular letter issued by the minister of health of Prussia advocates this method in postvaccinal encephalitis.

Discussion on Treatment of Tuberculosis

The publicity in connection with the campaign against tuberculosis has awakened interest in the subject on the part of the general public. The Academy of Medicine, the sessions of which have been regularly reported in the daily press, has been the scene of many discussions, which have included a critical examination of the usual accepted methods of treatment, the results of which have been recalled for the purpose of serious comparison. At the last session, Professor Bezançon emphasized the great change that has been brought about in the treatment of tuberculosis since the discovery of pneumothorax. Until then the general treatment of tuberculosis was confined to superalimentation and to fresh air and rest. It was thought necessary to get the patient out of the city and subject him to a sanatorium regimen. Today, thanks to the introduction of pneumothorax, the patient can be taken care of in the cities, provided he remains under the control of a specialist. Professor Bezançon holds the view that it is preferable for the patient to remain in the city if the operator is skilful. He advocates the creation of a large number of centers for antituberculosis treatment, which should be, at the same time, centers of instruction and research. He thinks that financial efforts should no longer be directed toward the construction of sanatoriums. A general discussion followed Professor Bezançon's communication. Mr. Labbé spoke highly of the pneumothorax method in the treatment of patients having tuberculosis and diabetes. Mr. Sergent expressed himself somewhat reservedly as to the efficacy of the method in general, and emphasized the need of a sanatorium after the operation.

Interesting statistics were supplied by Dr. Guinard, chief physician of the sanatorium at Bligny, near Paris, which is one of the best equipped sanatoriums in France. Speaking with the authority that his long experience justifies, he confessed that the sanatorium is only palliative in its effects and that the remote results are rather mediocre and do not justify the enormous effort put forth or the expense involved. This sincere confession from the director of a sanatorium gives food for thought. Dr. Guinard made an investigation to see what had become of the patients who passed through the Bligny Sanatorium between 1903 and 1913. He found that 63 per cent of them had died during the five years that followed their admission, and 75 per cent at the end of ten years. The most that can be hoped for, he said, for a patient with frank bacillary infection who receives the best treatment is a 50 per cent chance of being alive at the end of ten years, if he has a slight infection, and 30 per cent chance of survival if, with a grave infection, he can be given pneumothorax treatment. For every person who does not meet these conditions, death within the time specified may be regarded as virtually certain, according to the opinion of Dr. Pissavy.

The Congress of Ophthalmology

The forty-third Congress of Ophthalmology will be held in Paris, May 12-15, 1930, under the auspices of the Société française d'ophtalmologie. Meetings devoted to the consideration of papers will be held at the Faculté de médecine de Paris, and the demonstrations will be given in the ophthalmologic services of the hospitals. Numerous papers will be presented by specialists in different countries. A paper on the biomicroscopy of the crystalline lens in the normal and pathologic state, accompanied by lantern slides, will be presented by Mr. Duverger of Limoges and Velter of Paris. The general assembly of the Société française d'ophtalmologie was held Tuesday, May 13.

ROME

(From Our Regular Correspondent)

May 15, 1930.

Opening of Medical Clinic in Genoa

In the presence of the queen of Italy, the Nuova Clinica Medica of Genoa, of which Prof. Nicola Pende is the director, has been inaugurated. It comprises three institutes: the clinic of internal diseases, the clinic of growth and constitution, and the clinic of labor. The last mentioned, which provides for the admission of patients having occupational diseases, has a department of the physiology of labor and a department of psychotechnics and vocational guidance. In his address, Professor Pende said that a modern clinic for the sick should always be fortified by a clinic for the healthy; that is, by an institute that studies, particularly in children and in adolescents, individual constitutions in order to discover in time organic and hereditary weaknesses, defects of growth and morbid predispositions. This constitutes, he explained, a sort of "health uplift," which he and his thirty-two collaborators provide each year for thousands of young men, for each of whom a health record card is filled out and filed.

Death of Professor Lomonaco

Prof. Domenico Lomonaco, of the chair of physiologic chemistry at the University of Rome, has died. Born in 1863, he was graduated in medicine at the University of Palermo and soon was appointed assistant in pharmacology, and later in physiology, at Florence. The physiologic laboratory was at that time under the direction of Luigi Luciani, and with him Lomonaco removed to Rome, where he was later appointed to the chair that he occupied until his death. He was the author of more than eighty publications pertaining to biology and medicine. His most important works dealt with pharmacologic subjects; with the results of the studies he carried out on the biology and treatment of malaria; with the biology of the silkworm, which is of such great importance for Italy; with the human nervous system, and with the glands of internal secretion. The results of his studies on the thymus and on the hypophysis constitute fundamental acquisitions in this domain.

A Cinematographic Library

The Istituto nazionale per la cinematografia educativa, the director of which is Dr. De Feo, has decided to establish in

Rome a large cinematographic library, which will receive gifts from more than 650 reviews and several hundred journals. The purpose will be the use, in relation to recent discussions before the League of Nations, of films as a publicity measure in the prevention of occupational accidents.

Census of Children with Adenoids

By order of the head of the government, a census of children with adenoids has been undertaken in the principal cities, to be followed by the organization of therapeutic measures.

The statistics are being collected by specialists in otorhinolaryngology according to special instructions from the general management of the public health service. For each pupil are recorded data pertaining to the occupation of the father and the economic conditions of the family; the opinion of the teacher on the child's progress in school, and the opinion of the physician on the state of the adenoid tissue and on possible other disturbances of respiration, phonation, organic exchange, and the nervous system. The census was begun at Rome, Naples, Milan, Florence and Turin. In Milan, about 55,000 pupils were examined, 13 per cent of whom were found to have adenoids. In Naples, more than 25,000 pupils were examined and 4,282, or nearly 17 per cent, were affected with adenoids. Of these, only 637, or 2.5 per cent, were found to be so affected as to require surgical treatment. In the statistics of Naples, the relation between adenoids and retardation in mental development of the child was clearly proved. A graph prepared by Prof. Della Cioppa shows that one finds still in the primary class children 8 or 9 years old with adenoids of the first degree and children 10 or 11 years old with adenoids of the second and third degree. In the third elementary class there are children with adenoids of the second or third degree who are up to 14 years of age. The mental retardation of children with adenoids is shown not only in comparison with healthy children but also in direct relation with the degree of gravity of the disorder itself.

Congress on Occupational Accidents and Diseases

The Commissione internazionale permanente per lo studio delle malattie professionali (for the study of occupational diseases) has decided to change its name to Commissione internazionale per lo studio della medicina del lavoro (for the study of occupational medicine), and has further agreed that its meetings shall be held in common with those of the Commissione degli infortuni sul lavoro (the commission on occupational accidents). The sixth international congress will be held in Geneva in 1931. There will be four topics on the program: (1) Cutaneous Infections in Relation to Occupational Accidents, which will be treated by the English, German and Austrian representatives; (2) The Anterior Status with Reference to the Consequences of Occupational Accidents, which will be opened by the Italian representative Professor Tovo of Turin; (3) The Remote Results in the Evolution of Traumatic Diseases, to be presented by the representatives of France, Germany and Switzerland; (4) Traumatisms of the Blood Vessels (Arthritis and Thrombophlebitis) with an official paper by the Italian representative Dr. Diez, and another official paper by an Italian on the subject of "The Susceptibility of the Human Organism to Toxic Substances Utilized in Industry."

International Contest for the Riberi Prize

The Accademia di medicina of Turin has opened the contest for the fifteenth international Riberi prize, amounting to 20,000 lire, or $1,000. The contest is for scientific works in the general field of medicine. Acceptable are: printed or typewritten works in Italian, Latin, French, English or German. Printed works, however, must have been printed since 1927. Duplicate copies of the competing works must be sent under registration to the Accademia medica di Torino, not later than Dec. 31, 1934.

Modification of Law Pertaining to Vivisection

The cabinet has approved a draft of a law that would modify the regulations at present in force with regard to vivisection for scientific purposes. The purpose is to reconcile, as far as possible, the demands of science and the sentiments of the zoophilists. The new law provides that vivisection experiments shall be confined strictly to indispensable cases. In every case, suffering of the animals under experimentation must be prevented, and with that object in view, either local or general anesthesia is made compulsory. The execution of vivisection experiments will be placed under control of competent government organizations. Severe penalties are provided for violations of the new regulations.

Commission to Compile Model Diets for Pregnant Women

The Opera nazionale per la protezione della maternità e dell'infancia, in view of the great importance of diet during the periods of pregnancy, puerperium and lactation, not only for the mother but also for the child, has taken action to secure suitable diets for both mothers and children, the idea being that the diets approved shall serve as models for all the institutes under its jurisdiction. The determination of the diets has been entrusted to a commission comprising physiologists, pharmacologists, obstetricians and pediatricians, which will collect and coordinate the factors or elements needed for the compilation of standardized tables.

CAPE TOWN

(From Our Regular Correspondent)

June 2, 1930.

Malaria Research

For several years the lay press has urged on the government the desirability of instituting an organized campaign against malaria. The union has always had malaria. Even in the southern parts, the disease was troublesome in the early days, and although there is now no endemic malaria in the greater part of the Cape and the Orange Free State Provinces, malaria carrying mosquitoes—notably *Anopheles funestus*—are still common enough in these provinces. In Natal and the Transvaal malaria is almost a national disease. Its incidence is wide, and its annual economic toll on the population is abnormally large. In the absence of proper data it is impossible to calculate this loss accurately, and the estimate of £6,000,000 a year, as the loss sustained by interference with industrial labor on account of malaria, must be regarded as a mere estimate, probably below the actual figure. Such economic loss is due to sick leave, and the various government departments have attempted to minimize it by various means, so far without conspicuous success. In both of the northern provinces it is still customary to induce officials to work in malaria striken districts by offering them a "malaria allowance" which is in the nature of a special solatium. This custom is to be deprecated from all points of view.

The education department, for instance, has mapped out one province into areas designated as, "comparatively free from malaria," "slightly malarious" and "dangerously malarious" In the free districts, the teachers get no malaria allowances; in the slightly malarious districts a small allowance and in the dangerous areas a correspondingly increased allowance. Unfortunately, even this increased allowance is not sufficient to tempt the good teacher to go into these areas, with the result that the teaching staff in such districts is recruited largely from less capable men and women, who have to deal with pupils who, owing to the fact that they suffer from chronic malaria, need the best teachers for their supervision and education.

In 1921, the medical inspectors of schools in the Transvaal, Drs. Leipoldt, Cleaver and Elias, published an interesting report on the schools in the malarious area, in which they showed how

widespread was the retardation due to malnutrition caused by chronic malaria, and under what adverse conditions teaching was given in these schools. They pointed out that the tendency was for these chronic malarious children to become socially and economically inferior to the average white population, and hinted that the mass of poor white was recruited from the malarious juvenile population. At present a Carnegie commission is investigating the poor white question in the union, but it is unfortunate that no member of the commission is an expert on malaria.

In Zululand in Natal, too, malaria is edemic, and frequent deaths occur from it. Unfortunately, however, malaria is not a fatal disease, in the popular conception of the term, and the lay public is not impressed by its economic effects. Hitherto all that has been done is to distribute quinine, although it is now well recognized that the wholesale administration of this drug is not a prophylactic against the disease.

The government was urged last year to invite Colonel James of the English medical research council, who had been assigned to the government of Kenya for malaria investigation, to break his journey here and to undertake a malaria survey of the union. It was also urged that the services of either Sir Malcolm Watson or Professor Swellengrebel be secured for the same purpose. Now it has been announced that Professor Swellengrebel has been invited to report on the malaria situation. The professor, who has recently returned from an investigation of malaria in India, is expected to arrive next September and will devote some months to research here. He is a descendant of one of our early governors, under the old Dutch East India Company, is fluently bilingual—a consideration that undoubtedly weighed with the government in inviting him—and is an acknowledged expert on the subject, although he is not a medical man.

We have in the union a malaria expert, Dr. J. A. Orenstein, whose work with Gorgas and Prince in Panama is well known, and who is president of the South African Medical Association and medical adviser to the Rand Mines Group. He has organized public opinion on the subject, and it is largely due to his advice and help that so much has been accomplished in the Transvaal in fighting malaria. Sir Malcolm Watson is at present investigating malaria in northern Rhodesia, and is expected to give a series of lectures on the subject before he returns to England.

Some Medical Aspects of Malaria

It is strange that in a country where malaria is so prevalent, so little has been done to investigate the medical problems in connection with malaria. Some research has been done on the malaria carrying mosquitoes, and de Meillon of the South Africa Institute for Medical Research has been at work on a mosquito survey of the northern areas. The department of public health has recently appointed Dr. Annecke as its malaria investigator, and is conducting a special survey in Zululand. Some work has been done on the blood pressure of chronic malaria patients, and in the *South Africa Medical Journal* papers on the treatment and clinical aspect of the disease have appeared. But the highly interesting problems associated with cerebral malaria, the influence of the malaria toxins on the myocardium and the kidney, and the no less alluring subject of malarial psychoses have received comparatively little attention, so that there is a wide field open for research workers.

Medical Association Studies Report on Health Insurance

Early this year the second report of the commission on old age, invalidity and unemployment pensions was published. It dealt solely with health insurance and adumbrated a scheme for such insurance which would be confined to industrialists in urban areas and to the European population on a contributary basis. The government has shelved the report, and it appears unlikely that anything will be done in the immediate future. Notwithstanding this, the medical association has carefully studied the report, and the various branches of the association have appointed special subcommittees to consider the possible effects on the profession if the recommendations of the commission are carried out. It may be that the capitation grant suggested by the commission is inadequate, while the income basis is too high. Practical modifications have been suggested, and these are now under consideration.

The medical profession realizes that health insurance must come, and that its success will depend upon the good will and cooperation of the profession. At present the medical profession gives far too many of its services free, and receives no proper recompense for doing so. It is taxed by the government for the privilege of giving its services, every practicing physician having to pay a yearly tax of $50 (£10) while it charges for registration of a new comer $125.

Lately it has been suggested that when medical men give their voluntary service to hospitals—which are all state supported in the union—the hospital boards should be called on to pay this tax. This has been done in one instance, but there does not seem to be a desire to extend the practice and to insist that it should be done in all cases. Nevertheless there is a growing feeling that the doctor is being exploited by the state, and that the time has come to make a stand against such exploitation in the interests of both the public and the profession.

BERLIN

(From Our Regular Correspondent)

May 12, 1930.

Fifty-Fourth Session of the German Surgical Society

As has been the custom, the Kongress der Deutschen Gesellschaft für Chirurgie was held in Berlin the week following Easter, under the chairmanship of Professor Anschütz of Kiel. The congress was well attended, as usual, and many new points of view and stimulating discussions were presented. Professor Körte, who is well known beyond Germany and who, although 76 years of age, is still called "der junge" to distinguish him from his father, resigned the office of secretary, which he held for thirty years. In recognition of his service, he was elected "honorary chairman," an honor that has been conferred only once before.

HEMORRHAGE

The first main topic on the program, "Hemorrhage, Arrest of Hemorrhage, and Prevention of Hemorrhage," was presented by Stich of Göttingen, who discussed the circumstances that, through excessive loss of blood, may give rise to conditions threatening life. He gave a comprehensive survey, fortified by his long experience. In recent years, electrosurgery has shown us a new method in this field. Bauer of Göttingen reported on arrest of hemorrhage in operations by means of the high frequency current, which are peculiar in that in such operations the electrical knife itself assumes the task of arresting the hemorrhage. Also von Seemen of Munich recommended operating with the electrical knife by reason of the fact that the method conserves the tissues in a remarkable manner, and reported on the good results, especially in the treatment of furuncles and carbuncles. Nissen of Berlin spoke on artificial blood shifting through the use of differential pressure, a procedure developed in the Sauerbruch clinic, which enables the operator, by means of subpressure respiration in operations on the brain and spinal cord, to reduce the blood content of those organs and also the volume of the brain to such an extent that the operation is greatly facilitated.

SURGERY OF THE SPINAL COLUMN

The second main topic, "Surgery of the Spinal Column," was introduced by Schmieden. He discussed the indications for operative intervention in vertebral fracture and in tuberculosis of the vertebrae. Vertebral fracture is associated in some

cases with manifestations of paralysis, which are more extensive, the higher the site of the vertebral fracture. The speaker and those taking part in the discussion took, for the most part, a reserved, if not actually a negative, attitude toward the idea of eliminating by intervention the pressure of the fractured vertebra or the pressure caused by its sequels. To be sure, there are cases of record in which the paralysis has been cured by operation.

Magnus of Bochum gave extensive figures showing the frequency of paralysis following vertebral fractures. From the remarks, it was plainly evident that there is some prospect of effective operative interventions in the future. It is to be hoped that the nature of the indications and also the operative technic and the causes of the paralysis will be better understood, and that, in at least some cases, the bad sequels can be prevented.

In the treatment of tuberculous spondylitis, the majority of surgeons, in view of the good results secured by Rollier in Switzerland and also by Bier in Hohenlychen, take a conservative attitude. In a large majority of cases, it is possible to cure the disorder by patient conservative measures. According to Schmieden, evacuation of the focus is indicated only in isolated involvement of the vertebral spinous processes.

Rehn of Freiburg called attention to the dangers to which surgeons, by reason of the nature of their profession, are exposed more than all other professions. He gave a graphic exposition of the difficulties with which the surgeon has to contend and which explain certain peculiarities of his character. Not only is the calling of a surgeon, of all professions, the most difficult, but on him rests the heaviest responsibility, for which reason only a man able to bear great physical and mental burdens should undertake the work of a surgeon. That is evidenced by comparing the mortality of surgeons with that of other professions. The average age of surgeons at death, he said, is far under normal. The mortality of surgeons of the 50-60 age group is about four times that of the general population. Rehn, and also Hahn, hygienist of Berlin, pointed out that it is not that the constant and cumulative action of anesthetics damages the circulation of the surgeon but that it is essentially the combination of physical work with the high mental tension and heavy sense of responsibility, which at the close of a forenoon's operations leaves distinct effects on the heart and leads to the high incidence of heart failure among surgeons.

In addition, about sixty separate addresses were delivered and followed by discussions; there were also twenty-four projections shown. The projections depicted joint and limb surgery. A film projected by Professor Walzel of Vienna showed the course of an operation that was to effect a repose of half of the diaphragm; a second film presented by Hintze of Berlin illustrated the healing of skin cancer by means of irradiation. Kulenkampff of Zwickau reached the conclusion that pain sensations are transmitted by the sympathetic nerve fibers. In neuralgia he has secured good results usually by the injection of alcohol, thus avoiding operative treatment. Guleke of Jena presented the results of his experimental researches on the origin of hydrocephalus.

The treatment of gastric ulcer was discussed with considerable detail. Starlinger of Vienna reported the results of an inquiry on the success and the feasibility of various methods of treatment, whereby a survey was obtained of the outcome in 26 gastric resections carried out in 85 of the best surgical hospitals of central Europe. The number of recurring ulcers was so small that Starlinger reached the conclusion that we not only *may* continue to perform resections but that it is our duty to do so, a result that the chairman, Anschütz, called especial attention to, amidst the loud applause of the assembly. As to the way in which the few failures may be eliminated, there was divergence of opinion. From the comprehensive discussion it was apparent that the success of operative treatment of gastric ulcer is less dependent on the operative method chosen than on the question as to whether or not the correct time was selected for the operation. In operations in the early stage of gastric ulcer the final results are not so good as in the later operations. Coenen of Münster described the method he employs to connect the esophagus and the intestine in case it becomes necessary to remove the whole stomach.

Schneider of Freiburg reported on his pharmacologic researches in wound shock, and on the basis of his observations he denies the occurrence of tissue poisons. As little is known of the processes that lead to embolism, he urged that statistics be collected that would take account of the smallest details.

Following the adjournment of the session, suitable ceremonies were held in Halle in honor of the hundredth anniversary of the birth of Richard von Volksmann, to whom the merit is due of having introduced into Germany Lister's antiseptic treatment of wounds.

Congress of Balneology

The Congress of Balneology, which was held in Bad Elster, April 9-13, concerned itself with three problems of especial interest: (1) Effect of Iron in Mineral Spring Baths; (2) Effects of Mud Baths, and (3) Diet of Patients in Health Resorts.

Research in recent years, carried out by Professor Baudisch, chemist, on the effect of iron in mineral spring baths have stimulated others to investigate the question from the medical point of view. According to the papers presented, iron, the powerful effects of which as a medicament are well known, is especially well utilized by the use of mineral spring baths. These deserve their ancient reputation. It was agreed also that the iron does not lose its efficacy in the waters that are transported elsewhere from the spring, provided the bottling and transportation are carried out hygienically and in a technically correct manner.

Mud baths have been thoroughly investigated from all angles, at the instance of the Zentralstelle für Balneologie, in which research the more recent innovations in physical chemistry were utilized. Their effect lies in the fact that thereby higher temperatures can be applied, the heat thus penetrating deeply into the organs and tissues of the body, so that the reputation of mud baths in rheumatic disorders and in the sequels of inflammations of the internal organs is justified.

The third topic on the program was "The Diet of Patients in Spas, or Health Resorts." Even before the war, a special diet commission appointed by the Balneologische Gesellschaft, under the chairmanship of Prof. Hermann Strauss of Berlin, devoted special attention to the preparation of suitable diets for patients in spas. The investigations of the diet commission now assume the task of establishing on a scientific basis the type of diet that should be followed in the various spas or health resorts. Patients who are gravely ill will, in the future as in the past, be treated in institutions and sanatoriums that are under clinical direction, but the number of patients who do not require sanatorium treatment and yet should follow a suitable diet is large in many resorts, so that also this class must receive consideration by the commission.

Death of Professor Matthes

Prof. Max Matthes, an eminent internist and director of the medical clinic in Königsberg, has died at the age of 65. He was known in wide circles not only as an experienced clinician and former chairman of the Deutsche Gesellschaft für innere Medizin but also as the author of the well known textbook on differential diagnosis. This work has appeared in six editions and has been translated into eight languages. There are few works that have an equal right to a place in the armamentarium of the internist. Matthes was to have served as secretary of the Gesellschaft deutscher Naturforscher und Aerzte, which meets in Königsberg in the autumn.

Marriages

ROBERT BATTAILE HIDEN, Stockbridge, Mass., to Miss Clotilda Rodes Waddell of Annapolis, M.D., June 23.

TEN EYCK ELMENDORF, New York, to Miss Marjorie McDonald, Forest Hills, L. I., June 17.

ANTHONY A. COLLETTI, Brooklyn, to Miss Rose V. Ferlazzo of Norfolk, Va., February 5.

RANDLE C. ROSENBERGER, Philadelphia, to Miss Sallie Slifer of Perkasie, Pa., June 10.

JOHN THOMAS WHITTY, Seattle, to Mrs. Irene Smith Kelly of San Francisco, May 20.

ARTHUR P. KANE to Miss Josephine Berg, both of Brooklyn, May 16.

Deaths

Benjamin A. Thomas ⊕ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1903; member of the American Urological Association and the American College of Surgeons; professor of urology, Graduate School of Medicine of the University of Pennsylvania, and formerly demonstrator of surgical pathology, University of Pennsylvania School of Medicine; chairman of the Section on Urology of the American Medical Association, 1925-1926; served during the World War; formerly on the staffs of the University Hospital, Polyclinic Hospital and the Presbyterian Hospital, Philadelphia, and the Milford Hospital, Milford, Del.; co-author of "Applied Immunology," and "Genito-Urinary Surgery and Venereal Diseases"; aged 51; died, May 29, in his home at Swarthmore.

Benjamin Pomeroy Croft, Greenfield, Mass.; Bellevue Hospital Medical College, New York, 1897; member of the Massachusetts Medical Society, and the New England Ophthalmological Society; secretary and treasurer of the Franklin District Medical Society in 1901 and 1902 and councilor in 1903 and 1904; aged 59; died, April 29, in the Farren Memorial Hospital, Montague City, of cerebral hemorrhage.

Charles Sias Wright, Portland, Maine; Harvard University Medical School, Boston, 1895; acting assistant surgeon, U. S. Public Health Service; served during the World War on the staff of the U. S. Marine Hospital number 16, where he died, April 13, of cerebral hemorrhage and chronic myocarditis, aged 62.

William M. Joyce, Chicago; Detroit College of Medicine and Surgery, 1897; member of the Illinois State Medical Society; assistant professor of otolaryngology, Northwestern University Medical School; on the staff of the Wesley Memorial Hospital; aged 54; died, June 10, of heart disease.

Isaac James Newton ⊕ Monroe, La.; University of Louisville (Ky.) School of Medicine, 1879; member of the American College of Surgeons; past president of the Louisiana State Medical Society; on the staffs of the Riverside Sanitarium and St. Francis Sanitarium; where he died, June 5, aged 74.

Paul Francis Gadle, Norwich, Conn.; University of Vermont College of Medicine, Burlington, 1917; member of the Connecticut State Medical Society; served during the World War; on the staff of the Backus Hospital; aged 36; was found dead, June 17, of acute endocarditis.

William Veenstra ⊕ Paterson, N. J.; College of Physicians and Surgeons, Baltimore, 1909; member of the staff of the Paterson Hospital; aged 45; died, May 17, in the Manhattan Eye, Ear and Throat Hospital, New York, of carcinoma of the larynx and gastric ulcer.

Samuel Timothy Nicholson, Washington, N. C.; College of Physicians and Surgeons, Baltimore, 1881; member of the Medical Society of the State of North Carolina; formerly on the staff of the River View Hospital; aged 75; died, May 23, of carcinoma of the lip.

Gilbert Jennings Toomey, Cleveland; Western Reserve University School of Medicine, Cleveland, 1919; member of the Ohio State Medical Association; on the staff of St. John's Hospital; aged 37; died, in May, in Bermarhizen, Germany, of scarlet fever.

Adolph Frederick Henry De Lespinasse, Eastport, Idaho; State University of Iowa College of Medicine, Iowa City, 1901; connected with the U. S. Public Health Service; aged 55; was found dead in bed on May 25, of myocarditis.

James Thornwell Hay, Boykin, S. C.; Medical College of the State of South Carolina, Charleston, 1900; member of the South Carolina Medical Association; aged 50; died, June 10, in the Camden (S. C.) Hospital, of cerebral hemorrhage.

Horace F. Villars, Little Rock, Ark.; College of Physicians and Surgeons, Little Rock, 1911; member of the Arkansas Medical Society; on the staff of the Missouri Pacific Hospital; formerly deputy coroner; aged 60; died, April 24.

Hiram M. Johnson, Toppenish, Wash.; Medical College of Indiana, Indianapolis, 1903; mayor of Toppenish; aged 56; died, April 28, in St. Elizabeth's Hospital, Yakima, of streptococcic meningitis, following otitis media.

Sydney Vattel West, Riverside, Calif.; University of California Medical School, 1903; formerly assistant professor of otolaryngology, College of Medical Evangelists, Los Angeles; aged 50; died, April 9, in Los Angeles.

John Valentine Hayden, Salem, Ky.; Miami Medical College, Cincinnati, 1878; past president of the Livingston County Medical Society; aged 80; died, May 14, of cerebral hemorrhage, in a hospital at Louisville.

Guy George Osbon, Jasonville, Ind.; Barnes Medical College, St. Louis, 1903; member of the Indiana State Medical Association; aged 52; died, June 14, of heart disease, in the Terre Haute (Ind.) Hospital.

Harmon Ellsworth Price, Los Angeles; Eclectic Medical Institute, Cincinnati, 1905; member of the Associated Anesthetists of the United States and Canada; aged 50; died, in February, of pneumonia.

Isaac Bradlee Gage, Bucksport, Maine; University of Vermont College of Medicine, Burlington, 1908; member of the Maine Medical Association; served during the World War; aged 54; died, March 2.

Josephine E. Barbat Winslow, San Francisco; Medical Department of the University of California, 1903; aged 61; died, April 1, in the University of California Hospital, of pulmonary tuberculosis.

Frank Christian Kleckner, Buffalo; University of Buffalo School of Medicine, 1909; member of the Medical Society of the State of New York; aged 52; died, April 26, of myocarditis and nephritis.

Thomas Edward Walker ⊕ Cleveland; Western Reserve University School of Medicine, Cleveland, 1915; served during the World War; aged 46; died, May 3, in Alhambra, Calif., of cerebral hemorrhage.

Max G. Schlotbom ⊕ Pittsburgh; Western Pennsylvania Medical College, Pittsburgh, 1902; aged 65; died, May 27, in the Western Pennsylvania Hospital, following an operation for intestinal obstruction.

J. W. Warren, Forked Deer, Tenn.; University of the South Medical Department, Sewanee, 1899; aged 60; died, May 16, in the Baptist Memorial Hospital, Memphis, of acute toxic nephritis and carcinomatosis.

James Edward Harbinson ⊕ Woodland, Calif.; University of California Medical School, San Francisco, 1922; on the staff of the Woodland Clinic Hospital; aged 36; died, March 9, of chronic nephritis.

Charles E. Williams, Auburn, Maine; Medical Department of Columbia College, New York, 1879; member of the Maine Medical Association; aged 81; died, February 12, of arteriosclerosis.

Walter Clifford Liebmann, Newark, N. J.; Medico-Chirurgical College of Philadelphia, 1916; served during the World War; aged 39; died, May 16, in the Isolation Hospital, of carcinoma.

Samuel Brackett Thombs ⊕ Portland, Maine; Medical School of Maine, Portland, 1880; for many years on the staff of the Maine General Hospital; aged 76; died, in April, of heart disease.

Fred Ernest Lambert, Des Moines; State University of Iowa College of Medicine, Iowa City, 1898; Rush Medical College, Chicago, 1901; aged 55; died, May 16, of cerebral hemorrhage.

John Valentine Carroll, Great Falls, Mont.; Medical Department of the University of the City of New York, 1886; aged 76; died, April 24, in the Columbus Hospital, of arteriosclerosis.

Marshall Kennedy Hall ⊕ Portland, Ore.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1893; member of the American College of Surgeons; aged 60; died, May 21.

⊕ Indicates "Fellow" of the American Medical Association.

Maurice Vejux Tyrode ✠ Boston; Harvard University Medical School, Boston, 1900; formerly instructor of pharmacology at his alma mater; aged 51; died, June 4, of heart disease.

Claus Hesing Heddens ✠ Wellsburg, Iowa; Rush Medical College, Chicago, 1898; formerly member of the board of education; aged 62; died, May 29, of a self inflicted bullet wound.

Abram L. Van Horn, Otsego, Mich.; University of Michigan Medical School, Ann Arbor, 1868; member of the Michigan State Medical Society; aged 85; died, May 20, of senility.

William H. Wolf, Pittsburgh; Eclectic Medical Institute, Cincinnati, 1896; member of the Medical Society of the State of Pennsylvania; aged 59; died, June 1, of angina pectoris.

Israel E. Lavine ✠ Detroit; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1923; aged 30; died, May 22, of injuries received in an automobile accident.

Louis Arthur Moll, Cambridge, Mass.; School of Medicine and Surgery, Montreal, Que., Canada, 1883; aged 72; died, May 16, of cerebral hemorrhage and arteriosclerosis.

Charles Mealand, Sacramento, Calif.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1886; aged 84; died, March 7, in the Sutter Hospital, of bronchopneumonia.

Herman A. Greiner ✠ Seattle; Hahnemann Medical College and Hospital, Chicago, 1904; aged 52; died, May 21, of coronary thrombosis, empyema and gangrene of the lung.

Philip Font Roberts, Kewanee, Ill.; Northwestern University Medical School, Chicago, 1906; served during the World War; aged 52; died, May 23, of heart disease.

Samuel N. McClean, Cleveland; State University of Iowa College of Homeopathic Medicine, Iowa City, 1886; aged 71; died recently, of cerebral hemorrhage.

John S. Stott, Portland, Ore.; Willamette University Medical Department, Salem, 1883; aged 72; died, April 13, of bronchopneumonia and arteriosclerosis.

J. Hamilton Hildebrand ✠ Biglerville, Pa.; University of the South Medical Department, Sewanee, Tenn., 1898; aged 70; died, May 14, of cerebral hemorrhage.

Arthur McD. Smith, Paris, Ark.; Medical Department of the Tulane University of Louisiana, New Orleans, 1892; aged 66; died, May 21, of myocarditis.

Benjamin M. Randall, Graceville, Minn.; Rush Medical College, Chicago, 1883; aged 71; died, May 24, of arteriosclerosis and cerebral hemorrhage.

Dana Boardman Seger ✠ Morrison, Ill.; Rush Medical College, Chicago, 1868; Civil War veteran; aged 87; died, June 17, of angina pectoris.

Milton Smythe McGrew ✠ Holton, Kan.; Hahnemann Medical College and Hospital, Chicago, 1891; aged 62; died, May 9, of heart disease.

Samuel Brown Norris ✠ Tucson, Ariz.; University of Illinois College of Medicine, Chicago, 1908; aged 44; died, May 27, of pneumonia.

George Essig, Brooklyn; Bellevue Hospital Medical College, 1893; aged 79; died, May 30, of diabetes mellitus and chronic myocarditis.

James Sylvester Voyles, Corinth, Miss.; Memphis (Tenn.) Hospital Medical College, 1892; aged 60; died, May 20, of chronic nephritis.

George Washington Foltz ✠ North Baltimore, Ohio; Starling Medical College, Columbus, 1896; aged 73; died, June 3, of heart disease.

Charles Melvin Collins, Des Moines; Physio-Medical College of Indiana, Indianapolis, 1897; aged 62; died, in May, of cholelithiasis.

William M. Richardson, Iron City, Ga.; Baltimore Medical College, 1901; aged 58; died, May 31, in Pendleton, S. C., of nephritis.

Charles C. Rogers ✠ Farmington, N. H.; Medical School of Maine, Portland, 1899; aged 53; died, June 1, of carcinoma of the liver.

James A. Shrader, East Moline, Ill. (licensed, Iowa, 1886); veteran of the Civil War; aged 87; died, May 23, of diabetes mellitus.

Jay J. Heator, Homer, Mich.; Indiana Eclectic Medical College, Indianapolis, 1890; aged 72; died, June 3, of heart disease.

Frank Reed Sallade, Womelsdorf, Pa.; Jefferson Medical College of Philadelphia, 1893; aged 61; died, May 15.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

PAROXYSMAL TACHYCARDIA

To the Editor:—A man, aged 55, employed in a garage, was first seen by me in 1927 for an attack of paroxysmal tachycardia. That particular attack lasted for five days. The patient is short and stout, 5 feet 5 inches (165 cm.) in height and weighs 165 pounds (75 Kg.). His physical examination reveals little except a slightly enlarged heart to the left of the sternum. In November, 1928, a trace of sugar was found in the urine and has been at various times since. However, the blood sugar was only 148 mg. per hundred cubic centimeters. At first he was placed on a diabetic diet, but the urine cleared up and though insulin was used earlier in the treatment it is now not needed. During August, 1929, he had two short attacks, which lasted about an hour. His longest attack lasted seven days without any relief. He constantly has a blood pressure of about 100 to 124 and over 50 to 60. Between attacks the pulse is about 80 and is regular in rate and pressure. There is little to be found during the attacks except the rapid heart, which varies from 180 to 200. The Wassermann reaction is negative. During the attack in 1927, an embolus lodged in the artery of the right arm. However, this must have been absorbed for the pulse has since returned to the member. All forms of treatment have been tried that I have heard or read about. Though digitalis has been tried it has failed to prevent the attacks. During the last attack I tried quinine. Still I do not know its value. Will you please send me any information you may have about how I may terminate an attack or prevent them. Please omit name. M.D., New York.

ANSWER.—Paroxysmal tachycardia of auricular origin appearing first at the age of 55 is so unusual as to demand confirmation by some graphic method. It is much more probably a ventricular type, and consequent on some definite pathologic condition in one or the other ventricle, and in this case probably the left. The enlargement of the heart to the left of the sternum would speak for some anatomic lesion, and the occurrence of an embolus in the right arm would make the presence of active bacterial endocarditis almost certain.

The patient should be gone over carefully with this idea in mind, and examined frequently for other evidence of emboli, petechiae, Osler's nodes, enlarged spleen and other phenomena. The temperature should be observed carefully and the blood examined for evidence of infection. If possible, repeated blood cultures should be made.

The possibility of the attacks being consequent on some coronary pathologic change must be considered. It is probable that there is some background.

The treatment is the treatment of the underlying disturbance and should not be directed at the paroxysmal attacks.

The ordinary type of paroxysmal tachycardia is auricular in origin. It almost always manifests itself early in life, and patients having attacks late in life usually give a clear history of the attacks beginning first before 30. They are almost never of any significance, except for their inconvenience. Many patients find for themselves some method of stopping the attacks. A large proportion of attacks may be stopped at once by vagal pressure. Sedatives may be of value. It is rarely necessary or advisable to use quinidine. Digitalis is not valuable in these cases.

USE OF OVARIAN EXTRACTS AT MENOPAUSE

To the Editor:—I should appreciate some report relative to the present status of various ovarian products in the treatment of normal and induced menopause. Is there any basis for expecting worth-while results in combating hot flashes and other vasomotor disturbances and, if so, is there any reason to give preference to any one of the various preparations, oral or hypodermic? Is there any standardization that is dependable or is the matter still a more or less hit and miss one? Please omit name.

M.D., Illinois.

ANSWER.—The Council on Pharmacy and Chemistry sponsors the following statement on therapy with ovarian preparations in the current (1930) edition of New and Nonofficial Remedies:

Rational as ovarian therapy may theoretically appear to be in some conditions, the actual results are rarely striking, and often nil to the careful observer. It is altogether probable that the activity which may be presented by the fresh gland is not contained in a finished desiccated product, or else, when given by mouth, it is destroyed by the digestive juices; extensive clinical experience has failed to establish the value of desiccated preparations administered orally. There is considerable evidence that the aqueous extracts prepared for hypodermic use are inert. . . . Much work has been done toward the elaboration of a potent, standardized preparation of the ovary,

and as a result of these investigations such potent standardized preparations for use by subcutaneous injection have become available. These preparations have been shown to induce estrus in mature animals and to induce sexual maturity in immature animals. Somewhat limited clinical evidence indicates their probable value in ovarian hypofunction.

The Council has omitted all desiccated ovary preparations for oral administration on the ground that there is no adequate evidence for their value (THE JOURNAL, June 21, p. 1996). Previously accepted ovarian preparations for hypodermic administration were retained provisionally. The Council has not accepted any ovarian hormone preparation, because the evidence for the value of these was considered inadequate.

TOXICITY OF PYROPHOSPHATES

To the Editor:—Please inform me as to the toxicity of the pyrophosphates, especially acid sodium pyrophosphate.

LEWIS T. MANN, M.D., New York.

ANSWER.—While pyrophosphate given by mouth seems to be quite inactive, excepting for local irritation due to salt action, it is highly toxic on hypodermic or intravenous administration. A dose of 2 Gm. of sodium pyrophosphate given by mouth daily for five days to a human being had no obvious effect and was eliminated almost quantitatively within forty-eight hours after the last dose. Dogs vomit and rabbits show no effect from oral administration. On intravenous injection, sodium pyrophosphate causes rapid and profound circulatory collapse, with slowing of the pulse, cardiac enfeeblement and fall in blood pressure, with death from respiratory paralysis and circulatory failure within half an hour. Apparently there is no agreement among observers regarding the reason for the death that occurs several days after subcutaneous injection. Some have ascribed it to renal and cardiac fatty degeneration, with lesser effect on the liver. Others have been unable to find such effects and ascribe the result to "salt action."

ORIGIN OF MUCIN SHREDS

To the Editor:—Kindly describe how the fluid, transparent mucus, secreted by glands in colon mucous membrane is changed to the semisolid shreds or casts found in the stools in certain cases of colon disorder. To what extent is desiccation or coagulation involved? Does "mucinose," a ferment, really exist, and what is the evidence? Is it a normal product of mucous membrane and what is its rôle in health and disease?

ORREN LLOYD-JONES, M.D., Beverly Hills, Calif.

ANSWER.—Mucous shreds or casts are dependent on the presence of contained desquamated epithelial cells and fat particles which can be detected in a microscopic examination of the mucous strands. When together with these contained particles there is desiccation, there is formed a shred or cast. Coagulation is probably not a factor in the strict sense of the term. The presence of a ferment "mucinose" is not definitely established.

EFFECTS OF CARBON TETRACHLORIDE ON THE SKIN

To the Editor:—What detrimental effects, if any, would daily applications of carbon tetrachloride to the hair or skin have? If used in equal parts with alcohol?

SAMUEL I. SCHANTZ, M.D., Brooklyn.

ANSWER.—Carbon tetrachloride has no effect on the skin except the removal of fat, drying the skin and hair. Mixture with alcohol would not change this. Large quantities used as a shampoo have through inhalation caused dyspnea, vertigo, headache and even death in one instance (London Letter, THE JOURNAL, July 31, 1909, quoted by Alderson, H. E.: Carbon Tetrachloride in Dermatology, *Arch. Dermat. & Syph.* **9**:411 [Sept.] 1923). Alderson mentions the injurious effect of the impure drug, citing a case of severe dermatitis.

USE OF ATROPINE IN PYLOROSPASM

To the Editor:—Has the use of atropine been abandoned by most pediatricians in pylorospasm of infants?

RAYMOND H. BAXTER, M.D., Marion, Mass.

ANSWER.—The treatment of pylorospasm has changed little in the last few years. Atropine is still used. Small concentrated feedings are the rule. Thick feedings are still advocated by some clinicians. It is not amiss to mention that pylorospasm and true hypertrophic stenosis should be differentiated clinically. Surgical intervention in the latter should not be delayed to a point at which the infant's nutrition has been so impaired that the surgical risk is prohibitive. In competent hands and with adequate understanding of the situation, operative results have become quite satisfactory.

PRODUCTION OF ACIDOPHILUS MILK COMMERCIALLY

To the Editor:—Kindly publish the standard method of producing a culture of *B. acidophilus* commercially with the greatest concentration of bacilli. Please omit name.

M.D., California.

ANSWER.—The earlier attempts to produce acidophilus milk met with incomplete success, owing to the various important factors that enter into the process. The difficulties have, however, been completely removed and a number of biologic houses and high class dairies are now producing a uniform product which meets the most rigid requirements. On the other hand, there are numerous producing concerns which are furnishing a product that is impure and bears little or no resemblance to genuine acidophilus milk. The supplying of such a product does much harm to the principle of acidophilus therapy and should be strongly discouraged. The manufacture of a pure, uniform grade of acidophilus milk requires certain facilities, including proper equipment, a bacteriologic laboratory and a trained bacteriologist. Unless such facilities are available, it is foolish for any person or concern to undertake the production of this commodity.

A successful product depends also on absolutely pure bulk starter and on strict adherence to rules governing commercial process of acidophilus milk production.

The following are the important steps involved in the manufacture of commercial acidophilus milk:

1. Supplying of pure laboratory starter by a laboratory engaged in the repeated isolation of *B. acidophilus* and in the preservation and testing out of the various pure cultures preparatory to their being used in commercial production.

2. Preparation of bulk starter (at the producing plant) from the laboratory starter supplied, with strict adherence to instructions to avoid contamination.

3. Sterilization of a high grade of milk in an appropriate sterilizer-incubator, and after cooling to blood heat, inoculation of this milk with pure bulk starter.

4. Incubation of the inoculated vat milk at constant temperature until complete ripening has taken place.

5. Thorough agitation of the ripened product, drawing off of this product into appropriate containers, and immediate storage in a cool place until delivery is made.

The most important part of the commercial equipment is the sterilizer-incubator. The type which is most appropriate and which has been adopted by successful producers is one in which the inner compartment or milk container is glass lined and surrounded by a steam and water jacket. The inner compartment must be provided with an automatic agitator. The lid should fit tightly over the top and should be so constructed as to prevent the introduction of dirt and dust. In short, no opportunity should be afforded here for the access of contaminating bacteria from outside the tank.

A pure, well ripened acidophilus milk should have a creamy consistency resembling a 25 to 30 per cent grade of cream; the color also should be that of ordinary cream. It must have an agreeable odor and taste which are characteristic of this product. It should whey off little at the most. Finally, a thorough bacteriologic examination of the fresh product should reveal a minimum of from 300 to 400 million acidophilus bacilli per cubic centimeter, and the absence of other bacteria.

AMENORRHEA

To the Editor:—A patient, aged 23, single, complains of amenorrhea, nervousness and headaches. She had normal menstruation once a year from the age of 13 to 21, and during the twenty-first year menstruated regularly for four months. Then she left home for training as a nurse and the periods stopped for five months; then she missed for six months, and at present has not menstruated for four months. During the last few months she has had numerous headaches in the forehead and vertex each week. She also has times when she is nervous. She is 65 inches (165 cm.) tall and weighs 143 pounds (65 Kg.). She appears healthy and is a well developed girl. Her pelvis, blood and sight are normal. What would be your diagnosis and treatment of this case? Please omit name.

M.D., Nebraska.

ANSWER.—If a thorough physical examination has not revealed anything to be wrong, the cause of the amenorrhea is most likely some abnormality in the function of one or more glands of internal secretion. The glands that may be involved are the ovaries, the thyroid and the pituitary, and it is usually difficult to detect the gland that is responsible for the lack of menstruation. The female sex hormone test of Frank and Goldberger may help, because if there is a cyclic accumulation of hormone in the blood the prognosis is better than if there is no such accumulation. Treatment is unfortunately seldom effective. Important measures are improvement in general hygiene, some reduction in weight and, in a few cases, the appli-

cation of small doses of the roentgen rays. However, roentgen treatments should be given only by an expert roentgenologist and only with the cooperation of a gynecologist, because harm may result from the injudicious use of this type of therapy. Before roentgen rays are used it may be advisable to try injections of anterior lobe of the pituitary, because this gland is the "motor" of the ovaries. The latter treatment is still in the experimental stage.

IMMUNITY TO DIPHTHERIA

To the Editor:—I have been interested in questions and answers in Queries and Minor Notes regarding the giving of diphtheria antitoxin as a prophylactic measure. Is the length of the immunity induced by a prophylactic injection proportionate to the amount of antitoxin given? I recently had a boy with diphtheria. His brother was found to have a positive throat culture but did not show any signs of clinical disease. He was given 1,000 units as a prophylactic measure. On the seventeenth day after receiving the antitoxin, he developed clinical diphtheria. He had continued to carry bacilli after his passive immunity had disappeared and then developed the disease. While he was being desensitized, in order that a therapeutic dose might be given, a severe reaction was experienced. If he had been given 2,000 or 4,000 units of antitoxin would he have been more likely to reach the point where his throat became negative, before his passive immunity wore off? Do you feel that all diphtheria contacts with positive cultures should have antitoxin, if they are not known to be immune? They may be immune, but the length of time required to make sure of this by a Schick test may give the disease time to take hold in those cases which are susceptible. I should suppose it better to give child contacts, with positive cultures and without previously demonstrated immunity, prophylactic antitoxin, as they are nearly all susceptible and may develop the disease. Would not their cultures in most cases become negative by the time passive immunity disappeared? I should think that the case I have cited is unusual. With adults, a much larger proportion of whom are immune, would it not be better to wait for a Schick test? Is it not true that those in whom tonsils have been removed are less likely to contract diphtheria, although, of course, the removal of tonsils has no effect on immunity? Would you consider this factor in deciding whether or not to give prophylactic antitoxin? Will you kindly permit another question, relative to scarlet fever active immunization? Why is the toxin used for producing an active immunity not buffered by antitoxin, as is the case with diphtheria toxin-antitoxin? The answer is doubtless well known, but I am ignorant on this point. Kindly omit name. M.D., Michigan.

ANSWER.—Opinion differs as to the frequency with which immunizing doses of diphtheria antitoxin should be given. As a rule, when a case of diphtheria occurs in a family the sick person and any carriers should be isolated and the other members of the family should be watched for the earliest evidence of disease. If satisfactory isolation is impossible or if circumstances are such that contacts cannot be carefully watched and treated promptly should they develop diphtheria, the safe practice would be to immunize all contacts.

Clinical evidence of sickness should be considered an indication for treatment rather than the report of a "positive culture." The culture report should be but an aid in arriving at a diagnosis and the detection of carriers, and should not be allowed to make a diagnosis or to determine treatment.

It is likely that large amounts of antitoxin are completely eliminated less quickly than smaller ones. The relative frequency of diphtheria among those with and without tonsils is difficult to determine. It is quite possible that abnormal tonsils may favor infection.

Enough scarlet fever toxin can be given to produce immunity without addition of antitoxin.

TREATMENT OF BRONCHIAL ASTHMA

To the Editor:—What is the present status of therapy of bronchial asthma? I have a little girl of 12 who has a typical case of two years' standing, getting worse slowly. She has made the rounds and has had no relief. She does not appear to be allergic to anything and her nose, throat and ears have been pronounced negative of any foci of trouble. Her blood pressure is only 105 systolic and 70 diastolic. The leukocyte count is 8,400; hemoglobin, 70 per cent; urine, normal. Is there anything radical that can be done? A. LIEBERMAN, M.D., Gary, Ind.

ANSWER.—The prognosis of bronchial asthma in children is usually quite good. In figures, about 20 to 25 per cent are "cured," using the term to mean freedom from symptoms for two years or more. About 80 to 95 per cent of children can be completely or partially relieved of their symptoms by the proper treatment.

By proper treatment is meant: (1) a complete and exhaustive history; (2) a thorough physical examination; (3) complete testing, including (*a*) skin tests, cutaneous and intracutaneous, of all materials to which the child is exposed; sometimes some have to be repeated, and positive tests should be checked clinically; (*b*) Wassermann test; (*c*) blood count, including eosinophil estimation; (*d*) sputum; (*e*) urine; (*f*) chest fluoroscopy and roentgenogram; (*g*) nose, throat and sinus study, including sinus roentgenogram, if necessary; (*h*) study of teeth; (*i*) other tests, such as electrocardiograms, at times.

Any positive test must be confirmed clinically and any materials found suspicious must be removed; if not possible to remove completely, as in sensitiveness to animal derivatives, pollens, house dust, eggs, milk, wheat and orris root, desensitization is usually advisable.

Nonspecific treatment is often necessary and good results frequently follow such things as autogenous or stock vaccines, iodides, and roentgen treatment of the chest or spleen.

The most important point is to follow out this routine early, before the asthma becomes complicated by chronic bronchitis and emphysema.

GASTRO-ENTEROSTOMY IN DUODENAL ULCER

To the Editor:—I have been treating for some time from a medical standpoint a woman who has a duodenal ulcer. The ulcer is apparently chronic, and a surgical consultant advises gastro-enterostomy. The woman manifests an enormous degree of visceroptosis; in fact, the greater curvature of her stomach almost rests on the urinary bladder. I would be grateful for information on several points. As I understand it, the anastomosis between the stomach and the bowel should be made with the first part of the jejunum just a few inches beyond the point at which the jejunum emerges from the ligament of Treitz. The ligament of Treitz, originating in the left crus of the diaphragm, would appear to me to be a more or less fixed point, and therefore not subject to the same degree of ptosis as would the stomach. If this is the case, how can an anastomosis be made between the first part of the jejunum, which lies distinctly above the level of the umbilicus, and the greater curvature of the stomach, which in this case lies practically on the urinary bladder? If the anastomosis is made at the proper place in the jejunum, will not the stomach, after operation, because of gastroptosis be subject to torsion, tension or practically inversion, and will there not be undue tension on the stitches sufficient to cause pain or malfunction? If an anastomosis should be made between the stomach and some portion of the intestinal tract more adjacent to the stomach in its ptotic position, at what point of the intestinal tract would the anastomosis probably be made? What effect on digestion and elimination would this unduly long loop of intestine proximal to the anastomosis have? Kindly omit my name. M.D., New Jersey.

ANSWER.—The reason for making the anastomosis within the first few inches of the jejunum is to make as short a proximal dependent loop as possible. With the stomach in its normal position, a few inches is sufficient length to permit good operative work.

When the stomach is lower than normal, one should use a slightly longer loop of jejunum than necessary to reach easily below the gastrojejunostomy without traction on the stomach.

The gastrojejunostomy would function the same as one made with a shorter loop with the stomach in its normal position.

In performing an anterior gastrojejunostomy when the proximal loop of jejunum must be quite long and consequently hangs with a long dependent loop, it is desirable to make a second anastomosis between its most dependent portion and the jejunum distal to the gastrojejunostomy. This would not be necessary in this instance.

DIAGNOSIS OF INFECTED CYST OR TERATOMA OF VAGINA

To the Editor:—A girl, aged 14 years, presenting the usual standard of nourishment for her age, noticed an offensive and copious vaginal discharge six or eight months ago. She was treated variously for gonococcal infection. I saw the patient about two months ago, when examination revealed a fluctuant mass along the right lateral wall of the vagina reaching from the clitoris to the cervix and obliterating the cervicofornix angle. On incision, foul pus escaped. There was not much pain, redness or fever. After curettement there seems little tendency to heal. I curetted and used iodoform, iodine, phenol and scarlet red, yet there was no change. Roentgen examination with iodized oil did not associate this abscess with the rectum or the spine. Any suggestion as to origin, prognosis or treatment would be appreciated. Please omit name. M.D., Chicago.

ANSWER.—The diagnosis of this interesting condition depends on the differentiation of an infected cyst developed in the vagina from an embryonal rest and a teratoma of the vagina. Vaginal cysts usually arise from remnants of Gärtner's duct, of Müller's duct, or from a misplaced ureter. According to Frank, the larger vaginal cysts extending along the cervix and into the broad ligament are surely of wolffian origin and are similar to parovarian cysts. The contents of a vaginal cyst are usually glairy mucus which may be blood tinged. If due to a müllerian duct rest, the retained menstrual flow, shortly after puberty, distends the vaginal pouch, producing a cystic swelling. Such sacs may become infected.

On the other hand, mixed tumors (teratomas) in the vagina in children, usually regarded as sarcomas (botryoid sarcoma) may present a similar picture. Although usually discovered in

infancy, they may not show signs of malignancy until after puberty. Necrosis of the epithelium readily occurs, followed by suppuration.

Epidermoid cysts in the vesicovaginal septum and dermoids in the vagina lateral to the cervix have also been described. Malignant changes in such vaginal cysts must also be considered. Large necrotic, hemorrhagic and degenerating cystic masses in the vagina are likely to be sarcomatous. The final diagnosis rests with a biopsy and a microscopic study of the tissue forming the walls of the cyst. It is obvious why the treatment described by the correspondent was unsuccessful. Both the prognosis and the treatment depend on the results of a definite diagnosis.

EXPOSURE TO INHALATIONS OF LIME DUST OR SODIUM CHLORIDE—USE OF COUNTER-IRRITANTS

To the Editor:—1. Will you kindly state the results or the effects on mucous membranes of the nose and throat and on membranes of the bronchi in men who are daily in contact with unslaked lime dust. These men are employed in the bagging department of a lime works. They complain of "soreness in the lungs." There is rather marked irritation of nasal membranes. Physical examination of the chest is negative; there is no cough. 2. Please answer the same query for men employed in a salt works—sodium chloride. 3. What benefit, if any, results from the use of mustard plasters in babies suffering from either lobar pneumonia or bronchopneumonia? Is there any scientific research or record to substantiate the general belief that mustard plasters are indispensable in the treatment of pneumonia? W. L. LINDSAY, M.D., Grantsville, Utah.

ANSWER.—1. Unlike siliceous dusts, which induce disastrous changes in pulmonary tissues, calcium dusts, slaked or quick, appear to limit their action to local harm on the bronchi and upper respiratory tract. The old term "chalicosis," meaning a pneumonoconiotic condition due to calcium dusts, is fast disappearing from common medical usage because of the attributing of such lesions to the silica content of the limestone. Lime dusts, and in particular quicklime (CaO), must be accepted as a definite cause of inflammation and erosion of nasal tissues and to a lesser extent of the other portions of the air passages. Nasal perforation as a result of exposure is well established. One of the most disturbing features of the process is the engendering of infection through lowering of resistance. When heavy deposits of lime dust lead to discrete caustic burns, the eschar so formed may tenaciously remain in place, immune to necrotic action. Such eschars may act as foreign bodies and long delay healing.

2. In many respects the results of salt dust action are the same as for lime, but they are of lesser severity. Lime irritation runs to actual ulceration, while salt in small amounts is harmless and in large amounts commonly stops at hyperemia and turgescence. Salt, however, may lead to nasal perforations. Salt may break down into hydrochloric acid and induce added irritation. Crude salt may contain irritant impurities. To an extent greater than for lime dusts, sodium chloride action is local and high in the respiratory tract.

3. Counterirritants have long enjoyed popularity in treating respiratory infections of whatever type. They are perhaps less generally used by the profession at present but still are in common use as a household remedy. There are no reports in the literature to the effect that they are indispensable, although most standard textbooks include them as a useful procedure. Care must be exercised in their aplication, however, as blisters and deep burns may result. Burns from mustard are not only painful but especially hard to heal. Such a result in a pneumonia is most undesirable for many reasons. In addition to the discomfort to the patient, the presence of a large burn may make treatment of a subsequent empyema most complicated and unsatisfactory.

CHLORINATION OF WATER

To the Editor:—Will you please let me know the strength solution that is necessary for chlorine to kill typhoid bacilli in water? We have a machine here that we use to put this chemical in our water, and an attempt to follow out instructions causes the water to taste either from the chlorine or from oxidation.

J. D. RILEY, M.D., State Sanatorium, Ark.
Superintendent, Arkansas Tuberculosis Sanatorium.

ANSWER.—The amount of chlorine necessary to destroy typhoid bacilli in water depends largely on the amount of organic matter present in the water. For a million parts of water the amount of chlorine may vary from one-half part to three or more parts, depending on the conditions. For intelligent operation of a chlorinating apparatus the services of a sanitary engineer or water bacteriologist should be acquired to determine the exact amount of chlorine necessary for that particular water supply.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, July 8, 1930. Sec., Dr. Stuart Graves, 519 Dexter Ave., Montgomery, Ala.

CALIFORNIA: San Francisco, July 7-10, 1930. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento, Calif.

CONNECTICUT: Regular, Hartford, July 8-9, 1930. Sec., Dr. T. P. Murdoch, 79 Elm St., Hartford, Conn. Homeo., New Haven, July 8, 1930. Sec., Dr. E. C. M. Hall, 82 Grand Ave., New Haven, Conn.

DISTRICT OF COLUMBIA: Washington, July 14, 1930. Sec., Dr. W. C. Fowler, District Bldg., Washington, D. C.

ILLINOIS: Chicago, July 8-11, 1930. Supt., Mr. P. B. Johnson, Dept. of Registration and Education, Springfield, Ill.

MASSACHUSETTS: Boston, July 8-10, 1930. Sec., Dr. Frank M. Vaughan, 144 State House, Boston.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 8-12, 1930. Supt., Mr. C. D. Koch, Harrisburg, Pa.

SOUTH DAKOTA: Deadwood, July 15, 1930. Dir., Dr. H. R. Kenaston, Bonesteel, S. D.

WASHINGTON: Seattle, July 10-11, 1930. Basic Science. Dir., Mr. Charles Maybury, Olympia, Wash. Regular, Seattle, July 14-15, 1930.

WEST VIRGINIA: Martinsburg, July 8, 1930. Sec., Dr. W. T. Henshaw, Charleston, W. Va.

Ohio January Reciprocity Report

Dr. H. M. Platter, secretary of the State Medical Board of Ohio, reports 26 physicians licensed through reciprocity with other states and 1 by the endorsement of credentials, at a meeting held Jan. 7, 1930. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Georgia Medical Department		(1924)	Georgia
Northwestern University Med. School	(1923)	Illinois, (1929) Michigan (1929) Alabama	
Rush Medical College		(1928)	Illinois
Keokuk Medical College		(1894)	Illinois
State University of Iowa College of Medicine		(1921)	Iowa
University of Louisville Sch. of Med.	(1926)	Illinois, (1928)	Kentucky
Baltimore Medical College		(1908)	W. Virginia
College of Physicians and Surgeons, Baltimore		(1912)	W. Virginia
Johns Hopkins University School of Medicine		(1927)	Maryland
Maryland Medical College		(1911)	W. Virginia
University of Michigan Medical School	(1910)	(1928)	Michigan
Hahnemann Medical College and Hospital of Penna.		(1926)	Penna.
Medico-Chirurgical College of Philadelphia		(1916)	Penna.
Temple University School of Medicine		(1928)	Penna.
Medical College of the State of South Carolina		(1928)	S. Carolina
Meharry Medical College	(1927)	Virginia, (1916) (1928)	Tennessee
Medical College of Virginia		(1900)	W. Virginia
Marquette University School of Medicine		(1929)	Wisconsin
University of Western Ontario Medical School		(1897)	N. Dakota
University of Berlin Faculty of Medicine		(1927)	Illinois

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement of
Western Reserve University School of Medicine		(1928)	N. B. M. Ex.

Rhode Island April Examination

Mr. Lester A. Round, director of the State Public Health Commission of Rhode Island, reports the written and practical examination held at Providence, April 3-4, 1930. The examination covered 7 subjects and included 70 questions. An average of 80 per cent was required to pass. Thirteen candidates were examined, 12 of whom passed and 1 failed. One physician was licensed by the endorsement of credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Harvard University Medical School	(1911) 88.1,	(1927)	89.5
Tufts College Medical School		(1911)	85.7, (1919) 85.8, 90.7, (1928) 86.6, (1929) 87.3*
University of Michigan Medical School	(1912) 91,	(1927)	89.4
University of Oklahoma School of Medicine		(1929)	89.4*
Jefferson Medical College		(1929)	89.2*
University of Lisbon Faculty of Medicine		(1915)	83.8†

College	FAILED	Year Grad.	Per Cent
Middlesex College of Medicine and Surgery		(1920)	67

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement of
Cornell University Medical School		(1925)	N. B. M. Ex.

* These applicants' certificates are being withheld pending completion of the hospital year internship.

† Verification of graduation in process.

Book Notices

NEW AND NONOFFICIAL REMEDIES, 1930. Cloth. Price, $1.50. Pp. 481; xlviii. Chicago: American Medical Association, 1930.

The appearance of this edition of New and Nonofficial Remedies rounds out a quarter century's work of the Council on Pharmacy and Chemistry. Founded to combat the evils that had grown up in the field of proprietary medicines and the advertising of proprietaries, the Council has been a constructive rather than a destructive force almost from the beginning. Year after year, this group of distinguished physicians and scientists has sifted the mass of new remedies put out by pharmaceutical manufacturers, choosing those which had promise of real worth for description in its annual publication. Many drugs which had thus been approved by the Council were taken into the U. S. Pharmacopeia at its last revision, thus becoming official and no longer requiring to be retained in the Council's book.

The present edition has all of the features that have in the past made the book such a reliable and efficient a guide to the physician who desires to inform himself on the new medicinal preparations: logical classification of preparations, with authoritative articles covering each class; complete and carefully written descriptions; elaborate indexes; and a useful cumulative list of references to the literature on products not accepted by the Council. Among the more important revisions that appear are those of the general articles Barbital and Barbital Compounds, Calcium Compounds, Cinchophen and Cinchophen Compounds, Digestive Enzymes, Cod Liver Oil and Cod Liver Oil Preparations, Ovary, Pituitary Gland, Radium and Radium Salts, and Serums and Vaccines. Among the new preparations descriptions of which appear for the first time in this edition are: Bismarsen, which is sulpharsphenamine bismuth; Dial-Ciba, which is diallyl barbituric acid; Calcium Gluconate-Sandoz, a more palatable and less irritant preparation of calcium; Atoquinol-Ciba, a cinchophen derivative; Pitocin and Pitressin, solutions respectively of the oxytocic and pressor principle of the pituitary gland; viosterol (the Council's name for irradiated ergosterol) in the form of viosterol in oil 100 D, which is irradiated ergosterol dissolved in vegetable oil and adjusted to have 100 times the antirachitic potency of cod liver oil, and in the form of cod liver oil with viosterol 5 D, which is cod liver oil with its vitamin D potency enhanced by addition of viosterol. While these new preparations (with the possible exception of viosterol) do not constitute major additions to the physician's armamentarium, each one gives promise of relative usefulness, and the physician who desires to keep abreast with the progress of therapeutics will familiarize himself with them as well as with the many other new preparations described in this valuable book.

LA PRÁCTICA MÉDICA EN LOS ACCIDENTES DEL TRABAJO. Por el Dr. Antonio Oller, director facultativo del Instituto de Reeducación Profesional, y otros. Paper. Pp. 469, with 115 illustrations. Madrid: Javier Morata, 1929.

This book, written primarily for Spanish-American physicians, consists of eighteen chapters; Dr. Oller has written five of these and contributed to two others. Five other physicians have written or contributed to ten chapters. The subjects for each chapter were chosen with a view to remaining in the realm of interest and experience of the general practitioner. The Spanish medicolegal conception of industrial accidents is young, the first Spanish industrial accident law having been formulated in 1878. The chapters on fractures and pulmonary disturbances of traumatic origin are perhaps the most useful. The importance of careful treatment of simple fractures as well as the more complex breaks is emphasized. The diagnosis of pulmonary tuberculosis of traumatic origin should not be made without a painstaking history and physical examination. Injuries to the nervous system are discussed fully and, in a later chapter, some of the difficulties in the diagnosis of malingering. The last three chapters are written by persons not related to the medical profession. A discussion of the prevention of industrial accidents by Miss M. Rodrigo emphasizes the teaching of hazards to the workmen. This is best accomplished by graphic and illustrated warnings, and the writer shows the various types employed by different races and countries. Another chapter, by J. Mallart, shows that by reeducation of injured parts an individual again becomes an active member of the economic and social world. C. de Madariago, an engineer, puts the finishing touches to the book in his brief discussion of compensation rendered by society to the injured workman.

PRACTICAL LOCAL ANESTHESIA AND ITS SURGICAL TECHNIC. By Robert Emmett Farr, M.D., F.A.C.S. Second edition. Cloth. Price, $9 net. Pp. 611, with 284 illustrations. Philadelphia: Lea & Febiger, 1929.

This edition represents a thorough revision. The history and the various factors affecting local anesthesia are discussed, followed by a description of the various drugs used. Procaine with epinephrine is still considered most satisfactory, although there are several other drugs approaching it in value. The advantages of local over general anesthesia are discussed in some detail. Over a period of years, special equipment has been developed to aid in giving local anesthesia or to improve the comfort of the patient. A most effective motor-driven, air-pressure apparatus is described for injecting the anesthetic solution smoothly and rapidly through an improved needle. This relieves the operator of considerable effort necessary with the syringe method. Spring retractors of various sizes are used for good exposure, avoiding all unnecessary traction on the viscera. An automatic lifter is used to move the patient, and a well padded operating table keeps the patient in a comfortable position.

The various types of local anesthesia are described. Infiltration anesthesia means the direct infiltration along the line of the incision. Regional or conduction anesthesia is the injection of the nerves at any point along their course up to their periphery. This anesthesia may be obtained by injecting the nerve trunk or a vein or arteries with local constrictors applied, or by the use of sacral or spinal anesthesia. Infiltration block anesthesia is a term used to include general infiltration in the approximate region in which the nerves are supposed to lie. This may be considered a combination of regional and infiltration anesthesia in a plane proximal to the fields of operation and is the method chiefly used by the author.

Paravertebral and the various types of sacral anesthesia have limited indications and are being used less because of the more satisfactory infiltration block of both the sensory and the sympathetic system. The several methods of obtaining sympathetic or splanchnic block anesthesia by blind injections with a needle have been largely abandoned for the anterior infiltration block of these structures in the mesentery of the viscus after the abdomen has been opened. Brachial anesthesia is preferred under certain conditions but requires more skill and experience than infiltration block. Spinal anesthesia is considered hazardous, except in the hands of an expert, and has not been used to any extent, because the methods of administering local anesthesia are satisfactory. Small doses of preliminary narcotics are usually given, although they should be wisely chosen for each individual patient.

Local anesthesia may be entirely depended on for anesthesia, although the author places emphasis on the value of a highly competent assistant at the patient's head who may maintain the proper atmosphere and be of considerable service in many ways. The supplemental use of nitrous oxide or ethylene gas anesthesia is necessary only when the patient fails to cooperate during the use of local anesthesia. As the technic has been improved there has been a constantly decreasing number of patients operated on under general anesthesia. Following certain operations, a dilute solution of quinine and urea hydrochloride is injected in order to relieve the postoperative pain for a day or two. The anatomy of the sensory and sympathetic nervous system is fully described and illustrated.

The second section of the book includes a description of the technic of producing local anesthesia in the head and neck, thorax, spine and extremities. Most of the standard operative procedures are discussed in some detail, followed by typical

case reports including diagnosis, the technic and the result. Local infiltration block in surgery of the rectum and genitals does not offer especial difficulty. Almost all operations on the kidney, ureter and bladder may be done under local anesthesia, although occasionally general anesthesia must supplement it. Sacral anesthesia is urged for all cystoscopic examinations. In the last section of the book is included surgery of the abdominal wall and cavity.

Considerable credit is given to the psycho-anesthetist at the patient's head for cooperation in obtaining relaxation of the abdominal wall and preventing evisceration. Emphasis is placed on good exposure and the avoidance of traction on viscera. Methods of overcoming the difficulties resulting from distended intestines are described. Occasionally local anesthesia must be supplemented, although as the operator becomes more experienced in the use of local anesthesia this is rarely necessary, except in children. Infiltration block of the abdominal wall is usually preferred followed by an infiltration block of the sympathetics directly under vision into the mesentery of the viscus. No difficulty is usually experienced, for the infiltration requires no especial skill. If the needle is small and is kept moving, there is no danger of injecting a blood vessel, although one must continually observe care to avoid this possible danger. The injection of a small amount of procaine with epinephrine into a blood vessel is not without danger.

Most of the author's abdominal surgery is done under local anesthesia, and typical case reports are included under a discussion of most of the standard operations. Local anesthesia in acute inflammation of the abdominal viscera has often been found unsatisfactory because of the difficulty of obtaining relaxation and complete freedom from pain. However, the method of infiltration block of the abdominal wall followed by the infiltration of the mesentery has proved to be quite satisfactory in most of these cases. Surgery of the female pelvis may sometimes be preceded by preliminary infiltration from below in the presence of large tumors or of adhesions. The most satisfactory relaxation and exposure may be obtained with the patient in the Trendelenburg position. Sacral anesthesia has not been found to possess the advantages of infiltration block either from above or from below in laparotomy for operations in the pelvis. Ordinarily there is no pain in operations on the various viscera if traction is avoided. Frequent illustrations accompany the descriptions of local anesthesia in various regions of the body. The author emphasizes the necessity not only of choosing the proper method and then inducing local anesthesia but also of maintaining the confidence and comfort of the patient by a delicate operative technic aimed to meet those demands. He portrays successfully the art as well as the technic of local anesthesia. According to the author, the average practitioner may obtain a satisfactory local anesthesia for almost any operation by following directions. Since local anesthesia is at present recognized as the safest method for the poor risk patient, the average patient should also benefit through its use. No general anesthetic is safer than local and not even the newer gas-oxygen mixtures, except in the hands of an expert, can approximate its safety.

LE LIQUIDE CÉPHALO-RACHIDIEN: PHYSIOLOGIE ET EXPLORATION DU SYSTÈME VENTRICULOMÉNINGÉ. Par Dr. Riser, professeur agrégé a la Faculté de Toulouse. Paper. Price, 28 francs. Pp. 250, with 24 illustrations. Paris: Masson & Cie, 1929.

The author has wisely given his book the subtitle "Physiology and Exploration of the Ventriculomeningeal System," as the major portion of the book deals with physiologic problems of the cerebrospinal fluid. The remaining chapters discuss the method of obtaining cerebrospinal fluid, encephalography, injection of iodized oil and the fluid changes in various diseases of the central nervous system. The chapters dealing with the origin, absorption and pressure of cerebrospinal fluid, and the chapter on the permeability of the meninges are well presented. The author is enthusiastic about injection of iodized oil into the cerebrospinal system—a method widely used in France. The bibliography is rather meager. The monograph, as a whole, is a valuable addition to the literature on the physiology of the cerebrospinal fluid.

ANNUAL REPRINT OF THE REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR 1929. With Comments That Have Appeared in THE JOURNAL. Cloth. Price, $1. Pp. 81. Chicago: American Medical Association, 1930.

Perhaps the outstanding reports in this volume are those on the ergot and the pituitary preparations which have been omitted from New and Nonofficial Remedies. The ergot preparations were omitted because all of them are watery extracts which, according to the present view, cannot contain much of the alkaloids and which were by actual assay found practically devoid of alkaloid content. The pituitary preparations omitted are all solutions of a strength different from that of the standard pharmacopeial product. Such variations, the council holds, is not in the interest of rational therapy. Other reports of special interest are: the preliminary report on Amniotin, which brings out the present experimental status of therapy with the ovarian hormone; and the preliminary report on Heparmone, a liver extract which is proposed for use in eclamptic conditions and for which the Council awaits further confirmatory evidence. The valuable report "Serum Disease and Serum Accidents," by Mackenzie and Hanger, is a helpful and well considered study of this important subject carried out by these investigators for the Council. Among the products reported as unacceptable are: Anayodin, Atomidine, Atychol, Borocaine, Cascara-Agar, Hernial, Kerasol, Keraphen, Sodiphene, Tamerici Salts, and Toxogon. The thoroughness and plain unvarnished common sense of these reports gives one a deep appreciation of the efficiency of the Council's rules and of the conscientious impartiality with which they are enforced.

DIE THERAPIE AN DEN WIENER KLINIKEN. Begründet von Dr. Ernst Landesmann, gew. Sekundararzt des Wiener Allgemeinen Krankenhauses, derzeit praktischer Arzt in Brünn. Eleventh edition edited by Prof. Dr. Alfred Fröhlich. Paper. Pp. 838. Vienna: Franz Deuticke, 1930.

This rather large volume in German is full of practical therapeutic advice in all the various apartments of medicine, surgery and the specialities. Each of the chapters is elaborated by a member of the clinics of Vienna. As usually occurs in a collaboration of so many authors, the various chapters are not equal in quality: some are excellent, and others are so full of recommendations of proprietary medicines, some of which are not available in this country, that the recommendations contained in these could not be well carried out here. Nevertheless, the good greatly overshadows the objectionable.

LA RACHIANESTHÉSIE: SA VALEUR ET SA PLACE ACTUELLE DANS LA PRATIQUE. Par Émile Forgue, professeur de clinique chirurgicale à la Faculté de Montpellier, et Antoine Basset, professeur agrégé à la Faculté de médecine de Paris. Paper. Price, 30 francs. Pp. 222, with illustrations. Paris: Masson & Cie, 1930.

The question of anesthesia is more acute than ever. All ages and countries have labored to solve its problems. Spinal anesthesia, conceived in this country, realized and systematized in Germany, and finally popularized in France, has been lately the subject of numerous monographs. The joint work of Forgue and Basset will be valuable to the American reader for several reasons. It contains an excellent summary of animal experimentation and clinical research on spinal anesthesia. The bibliography is representative and international. The book being primarily a work of practical interest, invaluable and hitherto unpublished material has been compiled concerning the accidents, complications and mortality of this method. A sane and conservative attitude is preserved throughout the entire discussion, full cognizance being taken of the seriousness, limitations and dangers of spinal anesthesia. From a joint figure of 222,467 spinal anesthesias, a mortality of 0.076 per cent is calculated. The solution preferred is 8 per cent syncain (French procaine hydrochloride) without epinephrine and hardly any mixing with spinal fluid. The lumbar puncture is made in the lower lumbar segment, never any higher. Operations above the diaphragm are never attempted under spinal anesthesia, and only limited indications are acknowledged in upper abdominal work. The authors take the sound view that the true realm of spinal anesthesia lies below the umbilicus. In spite of the fact that a great deal of space is given to the frequent fall in blood pressure during spinal

anesthesia, the preventive use of ephedrine, practiced so widely in this country, is not mentioned. One can but thoroughly recommend the study of this excellent monograph to all those who use this method and particularly to those who use it too often.

Medicolegal

Misrepresentations in Application for Insurance

(Conklin v. New York Life Ins. Co. (Wis.), 227 N. W. 251)

This action was brought by the beneficiary under an insurance policy on the life of her husband, who died about eleven months after the policy was issued, following two months' illness subsequent to an attack of influenza. It was stipulated by the parties that before the deceased applied for insurance he had been informed that he was suffering from diabetes and that at the time of making application he stated falsely, (1) that he had not been under observation or treatment in a hospital, (2) that no albumin nor sugar had been found in his urine, (3) that he had not consulted a physician for any ailment or disease which was not named in his answers and (4) that no physicians other than those named in his answers had been consulted by him or examined or treated him within the preceding five years. The jury returned a special verdict to the effect that the false statements of the applicant were not made with intent to deceive, that his diabetes did not increase the risk or contribute to the loss, that at the time of issuing the policy the insurer had knowledge, which, if diligently pursued, would have discoved to it that the applicant had diabetes, and that the statements made by the applicant did not induce the company to forego making further inquiry. Section 209.06 (1), Stats. 1927, provides that no statement made by the insured in the negotiation of a contract of insurance shall be deemed material or defeat or avoid the policy, unless such statement was false and was made with actual intent to deceive, or unless the matter misrepresented increased the risk or contributed to the loss. The insurance company moved that the court change the jury's finding to the effect that the statements made by the applicant were not made with actual intent to deceive, and that the court, on the basis of the verdict thus changed, give judgment for the insurance company. The motion was granted and judgment entered dismissing the action of the beneficiary under the policy. She thereupon appealed to the Supreme Court of Wisconsin.

The Supreme Court quoted with approval a statement made by the trial court that although it might be true that the insurance company ought to have been more diligent, it was also true that the applicant deceived the company by his false answers and that his beneficiary ought not to be allowed to profit by such deception. It seems incredible, said the Supreme Court, that an intelligent man such as the deceased was, who had been treated for diabetes over a period of more than one year, with eleven days in a hospital, could forget such weighty and material matters. The false answers could have been made for no other possible purpose than to induce reliance on them and thereby deceive the defendant company. The judgment of the trial court was affirmed.

Workmen's Compensation Act: Tuberculosis Not a Compensable Accidental Injury.—Barron alleged that in the course of his employment he was exposed from time to time to an atmosphere heavily charged with poisonous gases escaping from oil wells among which he worked; that his eyes, ears, mouth, nose and lungs were all irritated, inflamed and poisoned, and that on March 9 or 10, 1928, an excessive amount of such gases was accidentaly permitted to escape from a well, and that he was then and there forced to give up his employment and to cease working altogether. He claimed that as the result of the inhalation of such gases he was rendered susceptible to tuberculosis and contracted that disease, that at the time of filing his complaint he was suffering from tuberculosis, and that he would continue permanently to suffer from it. The industrial accident board of Texas awarded him compensation, and the insurer under the workmen's compensation act appealed to the district court, Crane County. Medical experts testified that tuberculosis is caused by a specific germ, the tubercle bacillus, and not otherwise, and that the inhalation of gases by Barron had no relation to the disease from which he was suffering, except that it would lower vitality, irritate the lungs and furnish a better opportunity and more favorable field for the development of tuberculosis. Testimony showed, too, that the oil field in which Barron worked was impregnated with hydrogen sulphide, which, while not always present in the atmosphere, was nevertheless in a measure an ever-present and common menace to those working in the field. The district court sustained the award of the industrial accident board, and the insurer appealed to the Court of Civil Appeals of Texas. Following cases previously decided, *Aetna, etc.*, v. *Graham*, 284 S. W. 931, and the Jackson case, 265 S. W. 1027, the Court of Civil Appeals held that Barron was suffering from an occupational or industrial disease, not from an accident, and therefore was not entitled to compensation. Quoting from the case last cited, the court said:

> Our statute has never gotten away from the central thought that the injury must be accidental in its nature. It is only upon that theory that the act itself has been held constitutional by our Supreme Court. It is clear to us that, so far as our Supreme Court has spoken, it has shown its approval of the rule, well-nigh universal elsewhere, that recovery cannot be had for what is termed an occupational or industrial disease.

The judgment of the court below was reversed and judgment rendered in favor of the insurer.—*Texas Employers' Ins. Ass'n. v. Barron (Texas), 21 S. W. (2d) 78.*

Malpractice: Statute of Limitations.—The physician-defendant delivered the plaintiff of a child, March 7, 1927. He visited her the next day. Until he was called, March 22, he did not see her again; then pus had formed, and he removed a piece of gauze. April 4, when he was again called, he examined the patient, gave her some aspirin tablets and told her that she would be all right in ten days. The patient was dissatisfied and employed other physicians. The physician-defendant did not treat her after April 4, 1927, and action was begun, April 3, 1929, alleging negligence on his part. The physician demurred to the complaint, claiming that under the laws of Minnesota all actions against physicians based on malpractice, error, mistake or failure to cure, whether based on contract or tort, must be brought within two years. His demurrer was overruled, and he appealed to the Supreme Court of Minnesota, the appeal turning on the time when the statute of limitations began to run. While the complaint, said the Supreme Court, seems to allege that the principal act of negligence occurred on March 22, it is claimed also that on April 4 the physician negligently failed to diagnose the patient's condition and to prescribe proper treatment. In *Schmitt* v. *Esser*, 178 Minn. 82, 266 N. W. 196, 197, involving malpractice in the treatment of a fracture, the court said that "the treatment and employment should be considered as a whole, and, if there occurred therein malpractice, the statute of limitations begins to run when the treatment ceases." The patient in the present case employed the defendant for the delivery of her child and for the necessary attention thereafter. Under the allegations of the complaint she needed his care when he last visited her, April 4, 1927, and there was a negligent failure to diagnose and treat on that date. The order of the district court overruling the physician's demurrer was therefore affirmed.—*Bush v. Cress (Minn.), 227 N. W. 432.*

Workmen's Compensation Acts: "Total Disability" Defined.—Total incapacity, under the Workmen's Compensation Act of Maryland, means not incapacity to do such work as the injured employee was accustomed and qualified to perform at the time of the accident, but incapacity to do work of any kind. If an injury deprives a workman of all the capacity he has left after a previous accident, the result may be classed as total disability due to the later injury. The degree of disability in any case is to be determined by the consequences of the injury to the particular workman disabled.—*Congoleum Nairn, Inc., v. Brown (Md.), 148 Atl. 220.*

Society Proceedings

COMING MEETINGS

American Association for the Study of Goiter, Seattle, July 10-12. Dr. J. R. Yung, 670 Cherry Street, Terre Haute, Ind., Secretary.

Associated Anesthetists of the United States and Canada, Winnipeg, August 28-31. Dr. F. H. McMechan, 770 West Lake Road, Avon Lake, Ohio, Secretary.

Minnesota State Medical Association, Duluth, July 14-16. Dr. E. A. Meyerding, 11 West Summit Avenue, St. Paul, Secretary.

National Medical Association, Indianapolis, August 18-22. Dr. Walter G. Alexander, 136 West Kinney Street, Newark, N. J., Secretary.

Pacific Association of Railway Surgeons, San Diego, Calif., August 22-23. Dr. W. T. Cummins, Southern Pacific General Hospital, San Francisco, Secretary.

Wyoming State Medical Society, Sheridan, July 14-15. Dr. Earl Whedon, 50 North Main Street, Sheridan, Secretary.

ASSOCIATION OF AMERICAN PHYSICIANS

Forty-Fifth Annual Meeting, Held in Atlantic City, N. J., May 6-7, 1930

(Concluded from page 2091)

Principles Underlying the Interpretation of Blood Chemical Data

DR. R. T. WOODYATT, Chicago: In the ordinary clinical practice of blood chemistry one measures the concentration of a substance in the blood or plasma; thus, the blood sugar concentration, the blood urea concentration, and so on. The purpose is to gain information concerning the metabolism of the substance in question. In studying the metabolism of a substance the factors of primary practical interest are factors of quantity or speed, such as the total quantity of the substance in the body, the rate at which it enters or leaves the body, and the rate of utilization. Such practical importance as may be attached to readings of the concentration of substances in the blood or the plasma depends on one's knowledge of relations between these factors of concentration and the factors of quantity or speed of primary interest. Thus, in connection with diabetes the factor of greatest practical interest is the rate of dextrose utilization, the blood sugar concentration being of interest only as an index of this rate or other related rates or quantities. Experiments with continued intravenous injections of lactose and sodium chloride demonstrate that relationships between the concentration of a substance in the blood and the metabolic factors of primary practical interest are variable. Whereas under some conditions a simple direct relation prevails, under others relations are greatly disturbed by various factors. With the rates of lactose supply, excretion and utilization, and the body content of lactose all constant, it is possible to vary the blood lactose concentration more than 100 per cent. One of the factors involved in such changes is the rate of blood volume flow. The experiments also show other factors. In general, in clinical practice, it is preferable whenever possible to measure directly the rates at which a substance enters the body and leaves it and the difference between these two rates, according to the system generally followed in measurements of the rate of oxygen consumption; i. e., the total metabolic rate. This method gives reliable quantitative information concerning the rates of primary interest, whereas in the present state of knowledge it is not possible to measure these rates indirectly from the data obtained by chemical analysis of the blood.

Transfusion of Blood in Bright's Disease

DR. H. O. MOSENTHAL, New York: There has been hesitation felt concerning transfusion in Bright's disease on account of three possible objections: (1) It may raise blood pressure and increase hypertension; (2) it may irritate a diseased kidney; (3) it may increase uremic symptoms. In our experience we have never found that repeated transfusions up to 1,000 cc. have elevated the blood pressure even in cases presenting very high blood pressure. One case of 225 systolic and 148 diastolic pressure showed, after transfusion, 220 systolic and 145 diastolic. In another case of 230/160 in which transfusion was given by the direct method there was a slight diastolic drop. In a patient being prepared for transfusion and lying on a couch the pressure went from 162/118 to 228/118, which was a psychic phenomenon because no operative procedures had been done. Next day the pressure fell to its former level. We have not observed bad results on the kidneys but have noticed relief of oliguria and anuria in some cases. There was no increase of uremia following transfusion. We had two cases of hemoglobinuria and possibly necrosis produced by transfusion. The secondary anemia associated with Bright's disease can be alleviated by transfusion. Usually the anemia parallels the degree of renal insufficiency. We did not find that edema was influenced by transfusion. Our conclusions were that with renal insufficiency, severe anemia and impending uremia the patients could be helped by transfusion.

DISCUSSION

DR. T. B. FUTCHER, Philadelphia: I should like to ask whether Dr. Mosenthal has seen retention occur, in cases other than Bright's disease, when there has been serious renal damage. A few years ago I had a patient with severe anemia following typhoid with severe intestinal hemorrhages. We gave the patient four transfusions. The patient had had a slight albuminuria previously, but after the transfusion the urine became filled with albumin and anuria developed. The nonprotein nitrogen was 50 mg. The patient died of the effects of acute nephritis following the transfusion.

DR. L. G. ROWNTREE, Rochester, Minn.: I should like to ask what proportion of hemorrhage was associated with the cases of uremia in which transfusion was given.

DR. H. W. JONES, Philadelphia: Our studies on blood pressure agree with the figures of Dr. Mosenthal. Among 100 patients a rise of fourteen points was the highest seen. There was no increase in most of them. We thought we produced acute nephritis in two cases. As far as uremia is concerned, either by exsanguination or without it, we thought that the results were favorable. A banker, who had a large project on hand, and who had very marked anemia and interstitial nephritis, had twelve transfusions and was able to go back to work for six months and carry through his plans. Later he died of uremia. I should like to ask Dr. Mosenthal, if the patient has marked edema, whether it makes any difference how much blood is injected. I thought in one case that the patient got pulmonary edema after injection of 600 cubic centimeters of blood. In these cases I am accustomed to use smaller doses frequently repeated.

DR. H. O. MOSENTHAL, New York: In regard to Dr. Futcher's question: We have had the occasional experience of albuminuria, followed by anuria in non-nephritic patients. I think it is due to anaphylactic reactions or hemoglobinemia rather than to other phases of the situation. These were not more frequent in Bright's disease than in other conditions. These phenomena belong to some of the hazards of transfusion in general. We did not have anuria in any of the cases of Bright's disease. As regards purpura hemorrhagica, I am convinced that the transfusion will not prevent the occurrence of terminal purpura in Bright's disease. We had one boy whose father was anxious to keep him alive as long as possible. He had transfusions for one year. That boy had normal hemoglobin and normal red cells, but he was bleeding from every pore and the hemorrhage could not be prevented by transfusions. I do not believe that I have witnessed acute nephritis as the result of transfusion. I have seen hemoglobinuria. We thought that there was diaphoresis of red blood cells through the capillaries of the kidneys themselves. We have not had any cases of pulmonary edema. We have used great care in these cases. Patients whose heart was not considered competent were given digitalis first.

A Reversible Form of Experimental Uremia

DRS. THOMAS ADDIS and B. O. RAULSTON, San Francisco: Uremia was produced in adult female rats in which the inferior vena cava had been cut above the renal vein. Marked congestion of the kidneys resulted, but the collateral circulation proved to be very extensive. Following operation there was anuria.

The first urine that is passed has a high protein content and large numbers of red blood cells and leukocytes. Following this there occurs diuresis and after this the urine is normal. The gastro-intestinal tract contained from five to ten times the normal amount of ammonia, and the animals had acute diarrhea. We found this an easy method to produce uremia in experimental animals and also a method of determining the shift of chlorides, sodium, potassium, or whatever might be of interest.

The Grades of Immunity

DR. F. P. GAY, New York: For the past fifty years a large accumulation of facts has been collected in the study of immunology, and I believe that we have arrived at the stage when we ought to review our knowledge. There are different types of immunity, as, for instance, natural immunity, immunity by polymorphonuclears, and in addition there are plasma and serum changes which act against bacteria. There can also be an enhanced natural immunity in which animal products are massed against the bacterial organisms and also by mononuclear cells with a high degree of protection, such as macrophages which protect against certain organisms.

A second type of immunity is active immunity; this is brought about by the antitoxins that are formed in the blood and the antibodies that are formed in the cells against toxins. There is also an immunity apart from antibody immunity, such as viricidal immunity, or the protective bodies that combat protozoa.

A third type is transferred immunity, produced by means of antitoxins conveyed in serums and used against the bodies of the bacteria. By this means antibody production has been improved. All these types of immunity have been thoroughly studied, but so far sufficient emphasis has not been laid on the cellular element. The possibility should be considered of adding cells to the antiserum to increase its efficiency. If mononuclears and polymorphonuclears are added, better protection might be obtained. We have felt that we may get better protection against streptococci by adding cells from exudate of an actively immunized animal to the antiserum.

Psittacosis

DRS. W. W. G. MCLACHLAN, H. H. PERMAR and C. A. ROGERS, Pittsburgh: Three cases of this disease occurred in Pittsburgh in a household of six members. A parrot was given as a Christmas present, December 23. The bird was sick, and died on the 29th. A woman, aged 53, became sick, January 2, with headache, fever, chills and vomiting. From January 6 to January 10 she showed signs of consolidation of the lungs and had a temperature of 104 F. with rapid pulse. She died, January 10. The patient had a troublesome cough, no sputum, and was delirious. The white cells numbered 6,200. Autopsy showed bronchopneumonia and red hepatization, enlarged spleen and no pleurisy. January 4, a woman, aged 22, became sick with headache, fever, nausea, vomiting and intense fatigue. There was a troublesome cough for twenty-eight days with temperature which ran as high as 105. There was no pleurisy, and no signs in the chest. The temperature fell on the twenty-eighth day and the patient recovered. Leukopenia was present. This was the febrile type of the disease.

A child, aged 9, also became ill with a mild form of the same disease; fatigue was a prominent symptom; the spleen was enlarged and leukopenia was present for twenty-two days. The case greatly resembled influenza.

Studies made on the French epidemic in 1893 showed that the disease was probably due to a filtrable virus but that it need not come by direct contact with the parrot. A carrier stage may intervene. One case developed fourteen months after the parrot recovered. Pathologic studies of the lungs show hyperplasia of the epithelial cells.

DISCUSSION

DR. L. W. GORHAM, Albany, N. Y.: I saw five cases of psittacosis. Three of them looked like mild cases of typhoid. We investigated the source and found that a parrot had been given for a Christmas present. The bird came from Schenectady. The dealer said that he had no sick parrots, but one of the men working in the shop told us that they had two sick birds and that one had died. Three hundred birds had been shipped from Columbia early in December. In sixteen shipments received there were altogether eighteen cases.

DR. HARLOW BROOKS, New York: Psittacosis is one of the commonest diseases among birds at the zoological collection. I have not seen any cases occur from contact. I feel that we have not proved that human psittacosis is identical with the common form among birds. The avian disease, as usually seen, is not as virulent as the cases noted this year. I studied the bacteriology of the avian type twenty-five years ago. There was a diphtheroid bacillus resembling the proteus group. I am of the opinion that the human form of the disease differs widely from the disease known among veterinarians as avian psittacosis.

DR. OSKAR KLOTZ, Toronto: Psittacosis is probably a virus disease. We find that in other animal diseases also human beings may become infected with a much more intense and acute form. From the pathologic standpoint the lesions shown are extremely interesting. There seems to be a rapid proliferation of the epithelium. Are those cells all mononuclears or are they not from the epithelial walls? Desquamation must take place in the bronchioles. As for the etiology of this disease, in the oil immersion preparations there are seen small bodies like Rickettsia bodies with basophilic qualities. They are coccoid in type.

DR. L. W. GORHAM, Albany, N. Y.: In answer to the question as to whether these are epithelial or endothelial cells, the protoplasm in the exudate dyed a pinkish color while the epithelial cells are bluish. It appeared to be exudate of the mononuclear type rather than desquamated cells from the lining.

An Attempt to Classify the Anemias

DRS. HILDING BERGLUND and M. FALLON, Minneapolis: The textbook classification of the anemias is based on the morphologic studies of Ehrlich and Pappenheimer. We have made an attempt to relate the clinical groups to the morphologic groups. We have grouped the types as follows: 1. Simple regeneration: normal regeneration, with or without slight toxic alterations in white cells. 2. Simple toxic: normal with pathologic regeneration, and signs of degeneration in the red blood cells; toxic alterations in the white cells. 3. Pernicious anemia and pernicious type anemias: normal with pathologic regeneration; hypochromatic macrocytes; marked changes in white cell pictures; leukopenia with neutrophils and diminution of platelets. 4. Aplastic and semiaplastic types: absence of signs of regeneration in the myeloid series, with or without toxic signs. 5. Hemoglobin hypofunction: insufficiency in hemoglobin formation; marginal accumulation of hemoglobin (anochromasia) or deficient hemoglobin or hypochromasia. 6. Specific types: sickle cell type; congenital hemolytic jaundice.

Under hemoglobin hypofunction we have included as anochromatic types chlorosis, chlorotic types in both males and females, and the hypochromatic type in females only.

Under aplastic anemias we have included: (*a*) true aplastic anemia with gelatinous degeneration of the marrow; (*b*) aplastic anemia with replacement of marrow, or lymphatic leukemia; (*c*) anemia at termination of a toxic condition; (*d*) simple aplastic anemia with depression of marrow function, slight, moderate or marked, with or without toxic signs, as in senility, nephritis, influenza and chronic infections.

Acute Infectious Mononucleosis

DRS. L. W. GORHAM, T. D. SMITH and H. D. HUNT, Albany, N. Y.: Thirteen sporadic cases of this type were characterized by fever, malaise, very large glands and enlarged spleen, the blood picture showing a relative and absolute lymphocytosic, composed of abnormal lymphocytes. These cases have been mistaken for acute leukemia. Seven females and six males were affected. The temperature ranged from normal to 102 F.; the pulse was slow; the spleen was enlarged in eight cases; the blood picture showed increase in number of

white blood cells and decrease of polymorphonuclears. Spirochetal organisms were visible on the dark field. The duration of the disease was from one to twelve months. The patients eventually recovered. In experimental work, cultures of the organisms have been taken and the lesions reproduced in guinea-pigs. I believe that possibly a vibrio will be found to be responsible for this disease.

Etiology and Classification of Bleeding from the Mucous Membranes and Purpura Hemorrhagica

DR. H. W. JONES, Philadelphia: We made a study of 50 normal males; 15 had a history of spontaneous bleeding from the nose; 10 showed a positive capillary resistance test; 3 bruised very easily. Of 25 females, 8 bruised easily, and of these 7 showed a positive capillary resistance test. Three of the 7 had long menstruation periods. Bleeding time and clotting in all of these subjects was normal. We have considered that bruising easily may be part of the hemorrhagic group picture in people who bleed more than other individuals. From our studies of this group we concluded that all these conditions were related: bruising easily is at the bottom of the scale and purpura hemorrhagica is at the top. I do not think that thrombopenia is the only factor in this condition; other factors may be capillary weakness, mucous membrane disease, and platelet deficiency.

Gastric Function in Cancer of the Stomach

DR. A. L. BLOOMFIELD, San Francisco: Nineteen cases were studied. The patients were tested for ten minute volume of secretion. The majority of them had an anacidity, although in some it was near normal. The volume of secretion was subnormal. We believe that this condition was not due to the growth itself but was due to gastritis. It has been asserted that the growth produces gastritis, but we feel that patients who have gastritis with anacidity are the ones prone to develop cancer. Cancer cases with acidity are usually pyloric growths, and when the cancer gets back far enough the acidity disappears. We have the same gastric picture in patients who have no cancer at all. We do not believe that cancer originates as a primary disease. There is a preexisting gastritis and cancer develops on the top of this.

Nature of the Substance Effective in Pernicious Anemia

DRS. G. R. MINOT, Boston, and E. J. COHN, Chicago: In the fall of 1917 we commenced the task of removing one by one the constituents of the liver extract to find which was effective and which was not. We used first a protein coagulant, then a coagulant by heat, then successively ether and alcohol to extract various materials. We learned from our work that the active principle was water soluble and that it was neither a protein or a lipoid. We then eliminated carbohydrate by treating the extract with basic lead acetate. After this we made a precipitate with phosphorotungstic acid. The result of this showed that we were dealing with a nitrogenous base, either peptide or proteose. It proved not to be a proteose. It was soluble in alcohol (biuret negative); therefore it was a peptide. This appeared to be nearly pure but still contained a blood depressant substance. We endeavored next to make an increased concentration so that the substance could be used for intravenous injection. Some of the difficulties of the work have been that the active substance is easily destroyed by ordinary reagents, such as silver, gold or mercury, and we had to find reagents that did not destroy the active fraction. We have, however, obtained the substance in sufficient concentration so that only half the amount is necessary, compared with the former dose. We have been able to prove that the substance is not ammonium acetate. There is evidence now that we have two substances left. The substance is nitrogenous, with a secondary or tertiary nitrogen character. The material is precipitated by gold. Interest attaches to the search for the nature of this substance, because it is felt that it may be similar to substances found in other organs than the liver, and probably of wide distribution in the body.

Use of Desiccated Hog Stomach in Pernicious Anemia

DRS. C. S. STURGIS and RAPHAEL ISAACS, Ann Arbor: Hog stomach and various other substances, such as kidney and muscle meat, were treated with gastric juice. The best preparation was found to be desiccated hog stomach, with the fat and mesentery removed and the tissue chopped fine. This is dried in a partial vacuum until 100 Gm. is equal to 15 Gm. of desiccated preparation. This substance has no odor nor taste and when given with tomato juice is easily taken. The dose is 10 Gm. daily for each million deficiency in the red blood cell count. The maintenance dose is from 7 to 10 Gm. daily, which equals 70 Gm. of fresh stomach. The improvement shown is similar to that obtained by feeding liver extract. The relation of the size of the dose to the return to normal of the red blood cells depends somewhat on the state of the bone marrow. The average increase was found to be 400,000 red cells a week. These studies show that the probable results with stomach feeding will be the same as with liver. We tried to ascertain whether the active principle is in the mucosa of the stomach or in the muscle layer. Experiments showed that the muscle layer does not contain the substance. The active principle is contained in the mucosa. The result is better when the mucosa and muscle layers are ground together. There is probably some enzyme in the latter which liberates the active principle.

DISCUSSION

DR. W. B. CASTLE, Boston: Instead of using stomach and mucosa I used only mucosa but did not do enough work with this substance. My experiments indicated that the mucosa had some potency but not much. I found that 300 Gm. was equal to 200 Gm. of liver. I found it possible to boil the liver extract without deterioration, but there was no effect with the mucosa after boiling five minutes. The effect of preparation of the whole stomach is due to the interrelation of the mucosa and the muscle layer. There were evidences of a relationship between beef muscle and gastric juice. That fact alone suggests very interesting possibilities; namely, that there may be a substance that has influence on the bone marrow, and this may be found in the liver, the kidney and the brain. I have found a difference between liver and whole stomach. I am not sure that achylia has anything to do with the disease or not, but it may be that there is a metabolism of liver extract that takes place in the body. There is a type of anemia in which achylia is not present. It may not be absent from the stomach but, at some point between the stomach and the bone marrow, something may be missing that explains this type of pernicious anemia. I am trying to pursue this substance down the gastro-intestinal tract. Perhaps the doudenum elaborates a thermostabile substance. I should like to catch it this side of the gastric mucosa. I may find, however, that it is thermosensitive in the gastro-intestinal tract. One process seems to take place before it is influenced by acidity. I think we should stick to the theory that liver and kidney contain a substance which Dr. Cohn has discussed. I think Dr. Sturgis' work suggests that there is storage by muscle and gastric juice of some substance that is the principle found by Dr. Cohn and his associates.

Immunity in Pernicious Anemia of Rats

DRS. W. W. FORD and C. P. ELIOT, Baltimore: In rats in which the hemoglobin was 20 per cent of the normal and in which there was hemoglobinuria, pale skin and mucous membranes and decrease of weight and strength after splenectomy, one half died in a short time, one fourth recovered and died later, and a few remained well indefinitely. This so-called pernicious anemia of rats is due to a virus in the blood stream. Older rats do not develop this infection, which is probably due to a small bacillus, *Bartonella muris*. Some races of rats do not develop anemia after splenectomy. It has no effect on

the red blood cells. The rat louse is apparently the agent which transfers infection to susceptible rats, but there is a difference between the animals bitten, in which the incubation period is sixteen days, and the animals in which the virus is injected, in which the incubation is three or four days. The protective effect of the spleen on the animals is a remarkable phenomenon. It prevents the latent infection from developing as long as the spleen is intact. Wild rats that harbor trypanosomes, the leptospirochetes, do not develop anemia unless the spleen is removed. The spleen seems to be 100 per cent perfect protection. The method of this protection is an important question. Two statements are possible. The spleen represents the reticulo-endothelial system. We believe that the spleen causes a natural immunity which either resides in the cells of the spleen or develops protective substances. There seems to be a cellular mechanism by which the virus is taken care of. Cannon blocked the spleen and produced infection. Our results were obtained by removal of the spleen.

Coexistence of Myxedema and Pernicious Anemia

DR. J. H. MEANS, Boston: Myxedema and pernicious anemia have a superficial resemblance, and sometimes the diagnoses are confused. Paresthesia, anemia, edema, achlorhydria and mental changes are seen in both diseases. The two conditions sometimes coexist. This has been cited by several workers. In our studies we enumerated five cases in which both diseases were present. One patient, a woman, aged 73, for two years had had symptoms of paresthesia, sore tongue and yellow skin. She was considered to have pernicious anemia and received liver extract. She was given morphine for some reason, and this increased the myxedema so that she presented a terminal picture of myxedema. This phenomenon has been observed by Lund and Benedict. She was given thyroxin and greatly improved. After fifty days in the hospital the woman was well. Another patient, a man, aged 53, who had had myxedema seven years before, was relieved by thyroid and remained well on thyroid. Two years later he developed a true clinical picture of pernicious anemia. He was put on liver treatment. Thyroid was omitted at this time and the metabolism went to —40 and he showed myxedematous changes. In three of our cases the pernicious anemia appeared first; in the others, myxedema was present first. The two may coexist and both may be cured by the appropriate treatment. The necessity of thyroid treatment should be kept in mind in any case of anemia.

Alteration in Gastric Function Associated with Gastric and Duodenal Ulcer

DRS. F. M. SMITH, W. D. PAUL and W. M. FOWLER, Iowa City: In a series of observations we demonstrated reflex stimulation from the colon, duodenum and gallbladder. This caused gastric disturbance very similar to that caused by gastric ulcer. In our experiments, 1,000 cc. of air introduced into the colon caused gastric distress and pain as in chronic appendicitis. This could be abolished by atropine. Even a few cubic centimeters of air caused changes in the peristaltic activity. The kymographic tracings shown indicate the amount of disturbance produced in the stomach by tension in the colon. The pain resembles chronic appendicitis. Two fundamental factors have to be controlled in these experiments: the activity and the hyperacidity of the stomach.

Diabetic Coma: The Futility of Alkali

DR. I. I. LEMANN, New Orleans: There has been a feeling that the alkogenic activity of insulin is not enough to offset the acetone in diabetic coma. Our studies have shown that soda is not only not beneficial but actually harmful in these cases. The suggestion has been made by some workers that there may be other acid substances than ketones involved. In our studies of forty-seven comas in thirty-four patients, the coma did not coincide with the low carbon dioxide value. The lowest value was 6.6 per cent by volume. The patient was twelve hours in coma and was resuscitated by insulin. In a second coma a year later he was rescued without soda. A year later he died in coma when soda combined with insulin had no effect. Acute kidney block often happens with coma, and nitrogen retention occurs even after the patient is out of coma. In our forty-seven cases we had five deaths and there were several serious complications. One death was due to insufficient insulin; 200 cc. of 2 per cent bicarbonate solution was used in this case. Cases of convulsions and cerebral hemorrhage have been reported with the use of alkali. Soda may bring about rejection of fluid in patients who are already dehydrated. It can do no good and may do much harm.

DISCUSSION

DR. ELIOT P. JOSLIN, Boston: It is gratifying to hear this report, but we must not forget that many of our friends whom we respect highly do use alkali. The use of alkali makes every one afraid to have that patient die; therefore that case is treated with great care. Almost all children now recover, so now they have dropped out of the coma group. In the Deaconess Hospital in Boston, fifty-three successive children got well. The discussion of coma is therefore now confined to the cases in the aged, 70 years or more. The lowest carbon dioxide measured was 6.5. The danger with alkali has been that physicians have thought that they could just order the patient to take a teaspoonful of soda and then leave him alone.

DR. W. B. CAMPBELL, Toronto: Ten years ago I would have agreed with Dr. Lemann that there is no use of giving alkali in coma. Then I saw Dr. Welch bring a man out of coma, and keep him so, on alkali. I think it was my own incompetence in the use of alkali. Then insulin came and we realized that treatment with alkali was not necessary in the large majority of cases. Most coma patients will get well without alkali. However, at the same time Bock and I described cases in which the normal carbon dioxide did not return. The blood was free from ketone, yet the patient did not recover until alkali was added to the treatment. Though these cases are few, I see no reason to disparage the use of alkali in these cases. I have never seen bad results. It takes thirty hours' work to be sure that one does not need alkali. A complicated clinical process is required before one can be sure the patient is out of danger. If a small amount of alkali can relieve acidosis, even if recovery would result without it in some cases, the patient should be given the benefit of the doubt.

Malignant Plasmomas of Extra-Osseous Origin

DRS. HENRY JACKSON, JR., and FREDERIC PARKER, JR., Boston: We have studied four cases. One patient, a painter, aged 45, Norwegian, had a tumor of the tonsil (plasmocytoma). This was removed and a prediction was made that he would succumb to multiple myelomas. A tumor appeared two years later in the other tonsil, which was removed. In 1920 the first tumor recurred. The patient was given radium treatment. No general symptoms appeared until 1926, eight years after the first tumor, when he had pain in the leg. He was given roentgen treatments, but later lymphoid masses appeared in the axillae and the groins. In 1927, adenopathy was marked in the ribs, cranium and pelvis. In 1928, anemia was marked, and it progressed until he died in 1929 of cachexia. Autopsy showed multiple plasma cell myelomas. The second patient was a middle aged Russian Jew, seen first in April, 1929. He had a lump in the neck and pain in the leg. The neck tumor was a plasmocytoma. The case progressed with general adenopathy and anemia and the patient died within a year. The third case was in a farmer, aged 40, who had pain in the leg and glandular adenopathy. The patient improved with roentgen treatment and is alive after three years. The fourth patient is a woman, aged 72, who had a plasmocytoma removed from the neck two years ago, with no recurrence to date. Plasma cells rise from lymphocytes and are present in lymph nodes and bone marrow. These tumors may arise in bone or elsewhere. In our series of twenty cases, seven presented extra-osseous metastases. The metastases passed from lymph to bone. We believe this is a disease of the hematopoietic system, and the fact that some tumors arise in bone does not contradict this view.

MEDICAL ASSOCIATION OF GEORGIA

Eighty-First Annual Session, held, May 13-16, at Augusta

The President, DR. WILLIAM R. DANCY, Savannah, in the Chair

Plasmochin in the Treatment of Malaria

DR. R. L. MILLER, Waynesboro: I have used plasmochin in conjunction with quinine. I give 20 grains (1.3 Gm.) of quinine and 1 grain (0.65 Gm.) of plasmochin daily until the acute attack is under control. I then give two tablets of plasmochin compound three times each day, observing the following routine: For five days, plasmochin treatment; for four days, no treatment; for five days, plasmochin treatment; for four days, no treatment; for five days, plasmochin treatment; for four days, no treatment; for five days, plasmochin treatment. For those individuals who have an idiosyncrasy to quinine I have found that plasmochin is the best remedy. I have encountered only two cases which showed any manifestation of toxicity. The safest plan is to give the drug in a small dose and always on a full stomach. I have never used more than 1 grain daily. Plasmochin compound is better borne than plain plasmochin. It has been my observation that relapses, not reinfections, occur much less often when plasmochin is used than when quinine alone is used. In all forms of malarial infection plasmochin has a selective action on the sexual forms of the parasite, freeing the blood in from two to nine days, which action quinine does not have. The administration of plasmochin comes nearer accomplishing the original idea of Koch in breaking the vicious circle of malaria by destroying the sexual forms of the parasite in the human host, thereby making him noninfectious to the mosquito.

Treatment of Hemoglobinuric Fever

DR. H. M. TOLLESON, Smithville: In the treatment of blackwater fever, absolute rest in bed for a long time after the acute symptoms have subsided is of paramount importance. Early and thorough alkalization and an abundance of fluids by mouth when possible, by rectum and subcutaneously when necessary, will control the vomiting and dilute the toxins formed from the destruction of the red blood cells within the blood stream. Counterirritation to the flanks and abdomen, external heat and an initial purge of mild mercurous chloride and a saline are urged. Owing probably to the similarity in effect between the toxins liberated by the malarial parasites and the action of the hemolytic streptococcus on the blood stream, prompt administration of polyvalent antistreptococcic serum arrests the hemolytic process, which is the most frequent cause of death. Careful tonic treatment during the convalescence, with frequent checks on the heart action and an abundance of highly nourishing foods, will insure an uninterrupted recovery. Too much stress must not be placed on the serum alone, for it merely plays one of the leading rôles.

Acute Poliomyelitis

DR. HAROLD I. REYNOLDS, Athens: We have been accustomed to think of poliomyelitis in terms of paralysis. Until recent years the diagnosis was not made until paralysis made its appearance. Since the only permanent disabling feature of the disease is paralysis, when it occurs, the object of treatment should be to prevent it. Obviously, if the diagnosis is not made until there is paralysis, nothing can be done from a preventive standpoint. It is claimed that from 30 to 60 per cent of cases occurring during epidemics do not end with paralysis; therefore there is a preparalytic period during which diagnosis is possible and should be made. Sporadic cases are often difficult of diagnosis. Spinal fluid examinations will probably be necessary in order to make a positive diagnosis. The bulbar type, the so-called fatal type, is easier of diagnosis than the spinal, the symptoms being far more spectacular.

Vasomotor Rhinitis

DR. ARTHUR G. FORT, Atlanta: Vasomotor rhinitis is a fairly common disease. It is similar to hay-fever, vernal conjunctivitis and other allergic diseases. Deficiency in blood chemistry is frequently found. Local and systemic treatment should be given simultaneously. Surgery, except in the presence of polypi, is particularly disappointing during the acute condition. Surgery, where indicated, should be resorted to during the quiescent stage but too flattering results should not be expected. Radium should be used particularly where polypi are removed.

Spinal Anesthesia

DR. R. M. HARBIN, JR., Rome: Spinal anesthesia has been made as safe as any anesthetic can be. My personal experience is limited to its administration in seventy-five cases, throughout all of which a procaine hydrobromide preparation was used and no disagreeable results were encountered. Perhaps its most undesirable feature is the fall in blood pressure with its accompanying symptoms and potential danger, but this can be almost entirely eliminated by the use of circulatory stimulants and the Trendelenburg position.

Laws Governing the Healing Art in Georgia

DR. J. O. ELROD, Forsyth: I would recommend that all laws pertaining to the healing art in Georgia be so amended that each practitioner must register with the state board of health, this registration to be checked against registration of county clerks, and that all violators of the laws governing the healing art be prosecuted by the state board of health, the prosecution to be carried into effect by the attorney general of the state assisting various solicitors of the superior court of the state.

Health Habits for Children

DR. M. M. MCCORD, Rome: A large percentage of infants are born with a low resistance. The mother, as a rule, does not realize this until she compares her baby with another and finds that, although both children are about the same age and have been fed alike, the other child is the more healthy of the two. Every new-born baby should be given a thorough physical examination, plus examination of the mother's milk. Infants should be trained not only to take their food at regular periods but also to acquire the habit of a balanced diet. Babies should be weaned completely by the end of the first year. One of the greatest errors in a baby's diet is that the attending physician has failed to impress the mother with the importance of fresh vegetables and fruits. The child needs these foods for his body development, and if feeding with them is begun early the infant soon learns to like them. Many mothers are now calling for a complete examination of their apparently healthy children. If the physician sneers at the idea and says "Wait till the child gets ill before getting alarmed," she will go to a medical man who is at least progressive in his ideas. The greatest opportunity of the physician of this age is to help warn the public of the dangers of preventable diseases, and also show the masses the importance of regular periodic examinations as a wise step in helping the individual to safeguard his own health. This is an opportunity for real service, and every physician should give his whole-hearted cooperation.

A Critical Period of Childhood

DR. THOMAS BOLLING GAY, Atlanta: A series of 3,507 children from 5 to 10 years of age have been studied. It has been found that malnutrition, cervical gland enlargement and deciduous decay reach a maximum during this period. The contagious diseases are an important factor. Careful medical supervision of children in this age group would obviate the necessity of spending much time on the older school children. If this is true, our cities would do well to consider how the money devoted to health and maintenance in the public schools is being expended. The proper care of these children in the home is somewhat complicated in practice by the fact that children of this age have attained personalities of their own and parents conceive of them as being about half grown. Children of this age have decided likes and dislikes and are not slow in expressing them. Parents, therefore, are apt to treat them more or less as adults and rely on the children themselves to decide when they are sick, when they are well enough to get up, and when they have strength enough to go to school. It

would seem wise for our societies in radio talks and newspaper articles to devote a portion of the public education program to this age, for the health supervision in the public schools to be revised so as to give more attention to this age, and for us as practitioners to inform parents as to the need for caution in the treatment of all illnesses and physical defects of their 5 to 10 year old children.

Alimentary Anemia

DR. WILLIAM WILLIS ANDERSON, Atlanta: Alimentary anemia is a condition existing in early childhood in which there is an insufficient supply of iron from which to form hemoglobin. Under ordinary conditions an infant is born with sufficient iron stored in the liver to supply its needs for six months. Unfortunately, the amount of iron in either human milk or cow's milk is not sufficient to meet the needs of an infant. Mackay reports that the continuous administration of iron, beginning when the infant is less than 2 months old, raises the average proportion of hemoglobin to about 80 per cent by the age of 4 months. He states that the selection of iron is important. Iron and ammonium citrate prove effective. The iron contains a trace of copper. Its addition to iron more rapidly increases hemoglobin in rats. It seems entirely probable that we shall be giving minute doses of copper to anemic babies in the near future.

Chronic Cystic Mastitis

DR. C. C. HARROLD, Macon: McFarland is of the opinion that many conditions have been called "precancerous" which are in reality absolutely normal conditions of involution. I have in all probability removed many breasts unnecessarily. When expert pathologists differ on the interpretation of this condition when they have the entire breast to study under the microscope, it is out of the question for me to distinguish between a small cyst with a papilloma in the duct or the acini, and a similar cyst without. If Cheatle is right, and certain of these conditions are so potentially dangerous, it would be far wiser to do a simple amputation in all cases in which there are areas of chronic cystic mastitis.

Suprapubic Prostatectomy for Benign Hypertrophy

DRS. ERNEST CORN and LOVICK W. PIERCE, Macon: In benign hypertrophy of the prostate, prostatectomy offers relief in 95 per cent of cases, the operative mortality being from 3 to 5 per cent. Prostatic obstruction is a medical condition as well as a surgical one and the actual operation is only a small part in the treatment. Urethral catheter drainage followed by one stage prostatectomy is a safe method of procedure in selected cases and has many advantages over the two stage method. The preparation of a patient requires careful study and attention, and the mortality rate of prostatectomy depends largely on the thoroughness of the preoperative treatment.

Diverticula of the Esophagus (Pulsion Type)

DR. H. H. MCGEE, Savannah: A man, aged 44, complained of vague abdominal distress, occasional spitting up of food which he had eaten several days previously (longest, four days), a sense of tightness in the throat, foul breath, and loss of weight. He stated that he did not experience any satisfaction from eating until he had eaten a large amount of food. The clinical diagnosis was duodenal ulcer. Roentgen examination discovered a diverticulum of the esophagus. The diverticulum extended posteriorly, and in the anteroposterior view it was in the midline. When filled to capacity it measured 10 cm. in height and 8 cm. in breadth. Fifty-four hours after the first barium meal there was still retention in the diverticulum. Ten months after the first examination, the diverticulum was practically unchanged as to size.

Accidental Separation of the Normally Implanted Placenta

DR. E. CARSON DEMMOND, Savannah: Conservatism should be the rule in treating accidental separation of the normally implanted placenta, except in those cases in which the hemorrhage is extensive or concealed, cesarean section then being the procedure of choice, with hysterectomy if there is infiltration of the uterine musculature with blood.

Some Unusual Problems in Surgery of the Thyroid

DR. CHARLES E. WAITS, Atlanta: Surgery of the thyroid gland has been marked in recent years by many advances. The mortality in experienced hands has been reduced to about 1 per cent. However, if one expects to keep a creditable mortality experience, it is necessary to keep in mind the unusual accidents or complications which, even though rare, may occur in the practice of the most able surgeon. In five of my cases the final diagnosis was: squamous-cell epithelioma (epidermoid carcinoma); hyperplastic toxic goiter, with cardiac decompensation and extreme bradycardia; adenomatous goiter with severe hyperthyroidism, cardiac decompensation and auricular fibrillation; tetany following enucleation of two adenomatous growths from the left thyroid lobe, and permanent myxedema following removal of the usual amount of the thyroid gland for hyperplastic toxic goiter.

Tularemia

DR. S. E. SANCHEZ, Barwick: A peculiar characteristic in all my cases was that the course was similar to that of influenza. The white blood count was high even at the beginning and it remained high, from 14,000 to 20,000. In one case an abscess was incised and a culture made from it on egg yolk medium. This was kept at an even temperature under a sitting hen for seventy-two hours. There was found under the microscope the identical organism of tularemia. Examination of several rabbits, brought to the laboratory for liver and spleen examination, showed a spotted liver and spleen, with nodules on them. In some instances the liver was enlarged and there were necrotic areas. The dead rabbits were placed in the chicken yard, where there were four dozen chickens of all sizes. The chickens succumbed to the disease within two or three days.

Value of the Electrocardiograph to the General Clinician

DR. JAMES A. FOUNTAIN, Macon: The electrocardiogram is the most valuable graphic method to aid in the diagnosis and prognosis of heart disease. Willius has shown that in patients who have abnormal Q-R-S complexes and T-waves the average expectancy is less than in those without it. When the electrocardiogram is normal it cannot be stated positively that there is no disease of the heart muscle; but, when an abnormal electrocardiogram is found, one can say with a great degree of certainty that there is disease of the heart.

Nephrosis

DR. L. MINOR BLACKFORD, Atlanta: Nephrosis is a disease characterized by retention of water but not of nitrogen, by an excessive amount of albumin but of no blood in the urine, and by normal blood pressure until the edema acts mechanically to embarrass circulation. The proper treatment is limitation of fluid and salt, but unusually large amounts of meat to replace the albumin which is constantly excreted in the urine. Ammonium nitrate and mersalyl are valuable when drugs are required.

Pulmonary Spirochetosis

DR. HENRY L. LEVINGTON, Savannah: Last May I saw a man who was prostrate, having septic chills and fever, profuse sweats, a hacking cough, and a foul smelling mucopurulent and blood streaked sputum. He had lost 30 pounds (13.6 Kg.) in a few weeks. He had had profuse pulmonary hemorrhages. Examination of the chest revealed suggestive physical signs. The picture was certainly one of advanced pulmonary phthisis, but many consecutively examined specimens of sputum were negative for tubercle bacilli. The roentgen examination did not reveal the serious pathologic condition anticipated. It was only after this examination that I suspected a fungous or spirochetal infection, and when the sputum was again examined with this in mind the organisms of Vincent's angina were found in large numbers.

Angina Pectoris

DR. CHARLES C. HINTON, Macon: Of my thirty-one cases the following is a brief summary: males, 25; females, 6; youngest, 32; oldest, 75. Duration: shortest, 12 hours; longest, 12 years. Character: mild, 9; moderate, 11; severe, 11. Arteriosclerosis present in 17; syphilis in 3; aortic insufficiency in 6. The myocardium was weak in 10, fair in 6 and good in 15. Hypertension was marked in 2, slight in 8, absent in 21 and present in attacks in 6. The precipitating cause was exertion in 23, food in 4, emotion in 3 and tobacco in 2. Nineteen are dead. The complications were: 6 coronary occlusions, of which 5 were fatal; 1 ruptured aneurysm; cholecystitis and cholelithiasis, 3; prostatic obstruction (one with operation), 2; pellagra, 1; myxedema and obesity, 1; marked nephritis, 1; Raynaud's disease of fingers, 1. Nine of these had the benefit of theobromine and all were appreciably benefited as to frequency of attacks. Of the patients, 1 is dead from coronary occlusion; 1 is in bad condition because of myocardial failure; 1 is in fair condition, without attacks if careful, although 68 years of age and with marked arteriosclerosis; 6 are graded good, 3 having no attacks if careful, 2 having rare attacks and 1 having several daily but milder than formerly, though he is at work.

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

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*Thrombosis of Hepatic Artery. B. Seligman, New York.—p. 609.
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*Blood Regeneration in Severe Anemia: XXI. Liver Fraction Potent in Anemia Due to Hemorrhage. G. H. Whipple, F. S. Robscheit-Robbins and G. B. Walden, Rochester, N. Y.—p. 628.
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Skin Hypersensitivity to Phenylhydrazine Hydrochloride: Case. I. S. Wright and E. N. Joyner 3d, New York.—p. 683.
*Dietary Correction of Obesity. J. M. Strang, H. B. McClugage and F. A. Evans, Pittsburgh.—p. 687.
Broncholiths: Four Cases. J. J. Lloyd, Rochester, N. Y.—p. 694.
*Alleged Menstrual Fever in Pulmonary Tuberculosis. M. M. Weiss, Louisville, Ky.—p. 699.

Gonorrheal Endocarditis with Recovery.—In the case cited by Perry, repeated transfusions of 250 cc. of citrated blood (fourteen within sixty days) were given. The donor was bled 500 cc. and one-half this amount was given, the other half being kept in the icebox and given the following day. No reactions to the transfusions occurred. One injection of 150 cc. of convalescent serum was given. A limited use of autogenous vaccine appeared to be of harmful effect. A liberal food intake was maintained throughout the illness. Drug therapy, as indicated for pain and sleep and for bowel elimination, was employed. The author stresses the apparent value of frequent small blood transfusions in this treatment.

Thrombosis of Hepatic Artery.—Two cases of thrombosis of the hepatic artery are reported by Seligman. In one, an acute case, probably secondary to biliary tract infection, there was involvement of the portal and hepatic veins, a hemorrhagic infarct in the liver, and the hepatic artery showed a thrombus at its bifurcation extending into the liver. In the other, a more chronic case, probably of atherosclerotic origin in a man with thrombo-angiitis obliterans, the main artery was involved; no infarct was present. The patient probably did not die from this condition. The clinical and experimental evidence would suggest that the degree of liver injury following occlusion of the hepatic artery depends in part on the site of the occlusion and in part on the extent of the collateral circulation.

Blood Regeneration in Severe Anemia.—A liver fraction is described by Whipple et al. which contains from 65 to 75 per cent of the potency of whole liver for new hemoglobin production in experimental anemia due to hemorrhage. This fraction represents 3 per cent of the weight of the whole liver. Probably a number of active substances are represented in this liver fraction. Inorganic substances are important. Supplementing this liver fraction with iron may increase the total output of hemoglobin. The same thing is true for whole liver feeding plus iron, which may give maximal hemoglobin production in experimental anemia. Supplementing this liver fraction with small amounts of whole liver may increase the total output of new hemoglobin above the level due to the liver fraction alone. The authors urge that liver therapy should not be considered inert in any type of secondary anemia until it has been given a thorough test. All evidence available points to liver and kidney as supplying the essential factors in most available form for the reconstruction of new hemoglobin and red cells in anemia.

Anemia in Jaundice.—In 108 of the 347 cases analyzed by Jordan and McVicar, anemia was present. There were 81 cases of carcinoma, mostly in the head of the pancreas; 33 patients had anemia; of 93 patients with intrahepatic jaundice, 31 had anemia; of 142 patients with cholelithiasis, 30 had anemia, and of 31 patients with stricture of the choledochus, 14 had anemia. The intensity of the anemia was apparently independent of either the intensity or the duration of the jaundice. It is suggested that nutritional factors are of great significance in the etiology of the anemia occurring in jaundiced patients.

Diabetic Acidosis.—Six cases of diabetic acidosis, fatal in spite of treatment, are reported by Bayer. Clinically or at autopsy all these cases were shown to have been complicated by an infective or gangrenous process; one of them developed the diabetic syndrome secondary to an acute pancreatic necrosis; one of them, treated with huge insulin dosage, exhibited an unusual nephrosis. Analysis of records suggests that death occurred either because treatment was instituted only after intoxication had already progressed too far or because an infection inhibited the power of insulin, or because the complication was itself fatal. Experiment with the use of 15 Gm. of alkali in four cases showed significant change in the alkali level in only one instance and permanent clinical benefit in none.

Dietary Correction of Obesity.—A reduction diet is described by Strang et al. which supplies only the body requirements of protein, vitamins and salts. The diet averages 360 calories a day, which are derived from 58 Gm. of protein, 14 Gm. of carbohydrate and 8 Gm. of fat. Thirteen patients showed an average weight loss of 9/10 pound daily for fifty-nine days. Clinically, the patients were greatly benefited and showed no untoward reactions in spite of: (1) an early nitrogen loss; (2) a theoretical ketogenic-antiketogenic ratio of 3 to 4. Patients have been maintained on this rigid diet without complications for six months. Drugs and endocrine preparations were not used. The menu, which was used principally at the outset, was composed of fresh meat and egg white. Approximately 100 Gm. of lean steak was the backbone of each of the two largest meals. When necessary, fresh fish was given at intervals. Egg white was employed to balance the daily protein requirement. This was perhaps more desirable than the meat in view of the presence of fat and protein in almost equivalent amounts in even lean meat. On alternate days, the patient received either 100 cc. of whole milk or 100 cc. of orange juice and 50 cc. of actively growing yeast. The later diets contained carbohydrate sufficient to make a total of about 20 Gm. This increment was supplied in the form of 5 per cent vegetables.

The patient was asked to drink at least 2,500 cc. a day. At times, the daily intake reached from 4,500 to 5,000 cc., as a result of the enthusiasm of the patients.

Alleged Menstrual Fever in Pulmonary Tuberculosis.—The temperature charts of 100 tuberculous females, in all stages of the disease, who had been in an institution for six or more months and who had an equal number of normal menstrual cycles, were studied by Weiss. The temperature curves showed no regular changes associated with the menstrual cycle that could be identified as a characteristic entity.

American J. Obst. & Gynecology, St. Louis

19: 613-738 (May) 1930

*Analysis of 874 Cervical Cesarean Sections Performed at Chicago Lying-In Hospital. J. P. Greenhill, Chicago.—p. 613.
Plastic Operations in Gynecology. R. A. Hurd, New York.—p. 633.
*End-Results in Ten Cases of Hydatidiform Mole Treated by Curettage. M. C. Sturgis, Philadelphia.—p. 641.
*Test of Labor. J. M. Laferty, Philadelphia.—p. 647.
Carcinoma of Cervix Complicating Pregnancy; Roentgen Therapy with Birth of Normal Child. I. I. Kaplan, New York.—p. 654.
Ergotismus Gangrenosus. P. Oginz, New York.—p. 657.
*Properitoneal Cyst (Probably of Traumatic Origin) Associated with Fibroma of Ovary. K. H. Martzloff, Portland, Ore.—p. 665.
Ruptured Uterus with Living Mother and Baby: Two Cases. C. R. Steinke, Akron, Ohio.—p. 670.
*Fetal Dystocia Due to Metastatic Neuroblastoma of Liver. H. T. Hagstrom, New York.—p. 673.
Incarcerated Retroversion Associated with Pregnancy. A. Jacoby, New York.—p. 676.
Ruptured Uterus Following Attempted Version: Complete Recovery of Mother and Living Child: Case. M. F. Goldberger, New York.—p. 679.
Dermatitis Following Packing with Iodoform Gauze. N. B. Sackett, New York.—p. 681.
Reminiscence of Episode in History of Sloane Hospital. B. C. Hirst, Philadelphia.—p. 683.

Analysis of 874 Cervical Cesarean Sections Performed at Chicago Lying-In Hospital.—Greenhill analyzes 1,059 cesarean sections representing an incidence of 2.06 per cent, or 1 cesarean section for every 48.5 cases. The maternal mortality for 874 cervical operations was 1.26 per cent. If the 21 Porro operations that were performed after a laparotrachelotomy are added, the death rate is 1.23 per cent. For the 147 classic cesarean sections the mortality was 4.76 per cent, and this is reduced to 4.27 per cent if the 17 Porro operations, which were done after a classic cesarean section, are added. The chief indications for the laparotrachelotomies were cephalopelvic disproportion 42.1 per cent, previous cesarean section with test of labor 11.3 per cent, previous cesarean section without test of labor 6.5 per cent, toxemia without convulsions 9.7 per cent, eclampsia 1.8 per cent, placenta praevia 4.8 per cent, abruptio placentae 3.2 per cent, dystocia dystrophia syndrome 4.9 per cent, a number of previous stillbirths 4.2 per cent, and cardiac disease 3.3 per cent. Only 50 per cent of the patients were in labor at the time of operation. In 21.4 per cent of the cases the membranes were ruptured when the cesarean section was performed, and the interval between the rupture of the membranes and the time of operation varied from one hour to eight days. Ether was the anesthetic employed in 35.8 per cent of the cases, procaine hydrochloride alone in 55.1 per cent, procaine hydrochloride with ether or gas in 6.1 per cent, ethylene in 2.6 per cent and nitrous oxide in 0.4 per cent. The cause of death in the 11 fatal cases was: peritonitis 3, pneumonia (after ether) 2, sepsis 1, gangrenous appendicitis 1, pulmonary embolism 1, antepartum eclampsia 1, postpartum eclampsia 1, and tuberculous meningitis 1. The maternal mortality according to the indications was as follows: cephalopelvic disproportion 0.8 per cent, repeated laparotrachelotomy 1.6 per cent, toxemia without convulsions 1.2 per cent, eclampsia 6.3 per cent, placenta praevia no deaths, abruptio placentae 7.1 per cent, cardiac disease 3.4 per cent, and tuberculous meningitis 100 per cent. Fever after operation was present in 43.4 per cent of the cases. The main causes of pyrexia in the 196 cases in which the etiology was known were infected wounds 6.1 per cent, pyelitis and cystitis 4.8 per cent, bronchitis 2.1 per cent, pneumonia 1.3 per cent, grip 1.0 per cent, endometritis 0.9 per cent and lochiometra 0.9 per cent. In 46.7 per cent of the cases the patients left the hospital within fourteen days after operation and in 84.6 per cent they went home within eighteen days. The fetal mortality according to the indications for the operation was as follows: cephalopelvic disproportion 3.3 per cent, repeated laparotrachelotomy no deaths, toxemia without convulsions 7.5 per cent, eclampsia no deaths, placenta praevia 23.8 per cent, abruptio placentae 35.7 per cent, and psychosis 100 per cent. The chief causes of death among the forty infants were as follows: dead before operation 22.5 per cent, prematurity 25 per cent, atelectasis 20 per cent, monsters 10 per cent, and congenital heart disease 5 per cent. Among the 21 patients who had Porro operations there were no maternal deaths and 2 fetal deaths (9.5 per cent).

End-Results of Hydatiform Mole Treated by Curettage.—Sturgis asserts that a careful curettage in experienced hands is a safe as well as a conservative method of treatment for hydatidiform mole, especially in the young woman who still desires a family. Five out of ten women have had one or more normal pregnancies since the curettage. Three others are well and still retain their child-bearing functions.

Test of Labor.—The Tweedy test of labor is endorsed by Laferty. He says that in fourteen years of careful clinical trial it has rarely failed to indicate distress of mother or fetus in time for proper intervention to be carried out. It has frequently saved women from dangerous operative deliveries. A number of times it has indicated the need for intervention when no such need was suspected. It has shown definite results in the management of the complications of labor. It failed to warn in time or at all in only 13 per cent of 231 serious complications of labor. It had a definite effect on the operative rate, positively by indicating the need for operation in 6 per cent of the cases in which the primary status did not reveal any need and negatively by decreasing the operative rate 6 per cent in cases in which the primary status would have justified operation. It has been a factor of considerable importance in the production of a low maternal and fetal morbidity and mortality rate.

Properitoneal Cyst Associated with Fibroma of Ovary.—Martzloff reports a case of injury to the abdominal wall followed by a properitoneal accumulation of blood-tinged fluid. The causative factor was probably a motorized device of popular pattern designed to give vibratory massage to do away with superfluous fat. From the results in this case, it would appear that such motorized vibratory devices are certainly not entirely harmless when employed even by apparently healthy individuals.

Fetal Dystocia Due to Metastatic Neuroblastoma of Liver.—The dystocia in Hagstrom's case was due to an hypertrophied liver in the fetus as a result of a metastatic newgrowth from a congenital tumor of the suprarenal gland.

Archives of Internal Medicine, Chicago

45: 647-826 (May) 1930

*Anemias of Sprue: Nature and Treatment. B. K. Ashford, San Juan, Porto Rico.—p. 647.
*Arteriosclerosis in Young Diabetic Patient. H. C. Shepardson, San Francisco.—p. 674.
*Insulin Inactivation by Human Blood Cells and Plasma in Vitro: II. Effect of Infection on Insulin. S. Karelitz, S. D. Leader and P. Cohen, New York.—p. 690.
*Treatment of Pernicious Anemia with Aqueous Extract of Liver. H. M. Conner, Rochester, Minn.—p. 702.
*Cardiac Output in Heart Disease: I. Complete Heart Block, Auricular Fibrillation Before and After Restoration to Normal Rhythm, Subacute Rheumatic Fever and Chronic Rheumatic Valvular Disease. W. C. Smith, Atlanta, Ga., and G. L. Walker and H. L. Alt, Boston.—p. 706.
Metabolism of Obesity: V. Mechanical Efficiency. C. C. Wang, S. Strouse and Z. O. Morton, Chicago.—p. 727.
*Lipoid Nephrosis of Unusual Duration. E. M. MacKay and C. Johnston, New York.—p. 734.
Hay-Fever: Importance of Substances Other Than Pollen in Etiology; Influence on Seasonal Cure. M. B. Cohen and J. A. Rudolph, Cleveland.—p. 742.
*Lipoid Nephrosis of Unusual Duration: II. Pathologic-Anatomic Report. W. Ehrich, New York.—p. 749.
Chemical Determination of Glycogen Ratio in Bundle of His and Cardiac Muscle in Man and in Horse. W. M. Yater, Washington, D. C. and A. E. Osterberg and H. W. Hefke, Rochester, Minn.—p. 760.
*Effect of Tonsillectomy on Acute Attack of Rheumatic Fever. W. H. Robey and M. Finland, Boston.—p. 772.

Pancreatic Function: V. Secretory Mechanism of Digestive Juices. S. Okada, K. Kuramochi, T. Tsukahara and T. Ooinoue, Tokyo, Japan. —p. 783.

Effect of Cardiac Rate and Inhalation of Oxygen on Transient Bundle Branch Block. B. M. Baker, Jr., Baltimore.—p. 814.

Nature and Treatment of Anemias of Sprue.—Twenty-four cases of sprue, with a pernicious type of anemia, were studied by Ashford for the purpose of contrasting these with cases with a nonmegaloblastic type of anemia, some of which were not even due to sprue. From all the evidence so far accumulated, it seems justifiable to say that in not more than one half of the clinical cases of sprue in which the patients present themselves for medical attention is there any considerable anemia. Ashford has had several cases of severe sprue with practically no anemia in which the outcome was fatal. Thus, it is clear that the belief that severe sprue and pernicious anemia are one and the same disease seems unwarranted. The real type of megaloblastic anemia to be expected in severe sprue is hypoplastic. Seven cases are cited.

Arteriosclerosis in Young Diabetic Patient.—A group of fifty diabetic patients who had had the disease for at least five years and who were under 40 years of age was studied by Shepardson to determine the incidence of arteriosclerosis as evidenced by the roentgen ray. The pathogenesis of vascular disease occurring so commonly in diabetes was also investigated. The average age of the entire group was 23.4 years, and the average duration of the disease was 6.9 years. Eighteen cases gave roentgenologic evidence of vascular sclerosis. Shepardson states that neither the severity of the disease nor the presence of associated pathologic changes, with the possible exception of tuberculosis, can be considered as a pathogenic factor in the development of arteriosclerosis in diabetes. The duration of the disease is important only because the causative factor must act over a reasonable period of time before its effects are manifest. The average values of blood cholesterol found in this group were markedly lower than those heretofore obtained, and, paralleling the reduction of lipemia, the incidence of arteriosclerosis was found to be greatly reduced. The definite lessening of the intensity of the damage resulting from prolonged exposure to diabetes, consequent on the addition of insulin to diabetic therapy, has resulted in a marked lowering of the average blood lipid content. The parallel reduction in the incidence of arteriosclerosis apparently necessitates the assumption that altered fat metabolism is the morbific factor in the development of vascular disease in association with diabetes mellitus.

Insulin Inactivation by Human Blood Cells and Plasma in Vitro.—Summarizing the results of their various experiments, Karelitz et al. found that human blood plasma and, to a greater degree, human blood cells inhibit insulin action in vitro. Blood from diabetic patients as well as from patients with purulent infections or artificially produced infection-like conditions, such as serum sickness, causes greater insulin activation in a given time than does normal blood. Blood cells from a patient with myeloid leukemia and pus also show greater insulin inactivating power than do normal blood cells. This inactivation seems to act better at mildly alkaline p_H and is ineffective at p_H 6. After being heated from 55 to 60 C. from one to two hours or after incubation at icebox temperature, it also becomes ineffective. The inactivation requires time and is not present when the blood-insulin mixture is injected directly into the blood stream. The occurrence of this inactivating substance and its properties as described are so similar to the occurrence and action of enzyme that they believe that an enzyme, possibly trypsin, or an enzyme-like substance is responsible for the insulin inactivation. Their observations being limited to the effect of blood outside the human body on insulin action, they feel uncertain that this phenomenon occurs within the living organism. It is, however, conceivable that when cells are injured, as they are during infection, an abnormal state comparable to in vitro conditions exists, enabling this substance to act on insulin. Perhaps in these states of abnormal metabolism, as during infection, inadequate insulin production, neutralization of insulin by action of thyroid, suprarenal, pituitary and other ductless gland secretions, as well as altered enzyme action throughout the body or in certain locations, are all responsible, acting simultaneously and in varying degrees.

Treatment of Pernicious Anemia with Aqueous Extract of Liver.—An aqueous extract of liver made according to the formula of Porter and his associates has been used successfully by Conner in the treatment of twenty patients suffering from pernicious anemia. The effect on reticulated erythrocytes, mature erythrocytes and hemoglobin was essentially the same as that obtained with the liver diet or with Minot and Cohn's extract of liver. The effect on the symptoms was similar to that obtained by the other measures. The initial dose in thirteen cases was 90 cc. daily, whereas in seven it was 180 cc. Usually the dose was reduced to half the original amount about the end of the first week, whereas in two cases the original amount of 180 and 90 cc., respectively, was continued during the entire period of observation. In one case the original amount of 90 cc. was continued for only four days and then was cut in half, whereas in another case the original 180 cc. was continued for eleven days and then reduced to half. The patients usually were sent home to continue taking the amount that had been given them during the latter part of the treatment in the hospital.

Cardiac Output in Heart Disease.—As the result of their observation of ten cases, Smith et al. suggest that there may be a decrease in the output of the heart with the onset of congestive failure.

Lipoid Nephrosis of Unusual Duration.—The duration of the disease in the case reported by MacKay and Johnston was at least seventeen years. The boy was 20 years old when he died.

Lipoid Nephrosis of Unusual Duration.—Ehrich performed the necropsy in the case reported by Cohen and Rudolph. As the kidneys were still much enlarged, he regards it as being doubtful whether true lipoid nephrosis leads to contracted kidneys.

Effect of Tonsillectomy on Acute Attack of Rheumatic Fever.—Robey and Finland present evidence that tonsillectomy may be performed during the active stage of acute rheumatic fever without harm to the patient from the operation. Tonsillectomy at this time offers no more dangers than when performed under what appear to be the most favorable conditions. Ether was the anesthetic selected for the majority of the 165 cases of this series. The only complication that delayed operation was an accompanying bronchitis or bronchopneumonia. Cardiac conditions practically never contraindicate operation except in extreme cases. The decision to operate was made by internists and not by rhinologists. In several cases in which symptoms have repeatedly recurred, the results of operation have been brilliant.

Medical Journal and Record, New York

131: 493-544 (May 21) 1930

Gonococcus Infection in Woman. P. N. Charbonnet, Tulsa, Okla. —p. 493.

Reestablishment of Urinary Bladder Function in Tabes Showing Complete Retention: Case. A. Strachstein, New York.—p. 495.

Hay-Fever: Spring Type. A. A. Thommen, New York.—p. 496.

Changing Aspect of Aural Problems. G. B. McAuliffe, New York. —p. 501.

Kidney Function. H. A. Ellis, London.—p. 502.

Primary Carcinoma of Labia Minora. R. W. Locher, Baltimore.—p. 507.

Tuberculous Meningitis in Children. H. S. Snyderman, Philadelphia. —p. 508.

Diet in Aged in Health and Disease. M. Einhorn, New York.—p. 511.

Intestinal Obstruction. C. J. Drueck, Chicago.—p. 512.

Right Iliac Disease Associated with Colitis. L. H. Levy, New York. —p. 515.

Appendicitis: 108 Drainage Cases. H. Glascock, Raleigh, N. C.—p. 516.

Causes of Indigestion and Dyspepsia. S. L. Immerman, Philadelphia. —p. 518.

Rectal Cases with Interesting Features. A. A. Landsman, New York. —p. 521.

Mucous Colitis. E. C. Klein, Jr., Newark, N. J.—p. 522.

Dermoid Cysts of Umbilicus. S. W. Rock, New York.—p. 525.

Substitute for Opium. G. S. Foster, Manchester, N. H.—p. 527.

External Application of Atomidine in Treatment of Local Infections. C. W. Scheib, New York.—p. 528.

Chronic Purulent Otitis Media. J. G. Callison, New York.—p. 529.

California Medicine. J. W. Shuman, Los Angeles.—p. 530.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British J. Actinotherapy & Physiotherapy, London

5: 23-44 (May) 1930

Light in the Treatment of Lupus. W. J. O'Donovan.—p. 26.
Physiotherapy and Spa Treatment. W. Edgecombe.—p. 28.
Action of Thermal Mud on Respiratory Function. M. Comel.—p. 29.
South Africa as Climatic Resort. T. W. B. Osborn.—p. 31.
Medical Review of British Spas: X. Llandrindod Wells. M. B. Ray. —p. 32.
Foam Treatment and Therapeutic Action of Saponins. L. Shillito. —p. 34.
Cases Illustrating Use of Ultraviolet Light and Diathermy in Dental Practice. F. Talbot.—p. 35.
Electrical Treatment of Subacromial Bursitis. N. E. Titus.—p. 36.

British Medical Journal, London

1: 893-936 (May 17) 1930

Inexorability of Law of Evolution as Manifested in Modern Medicine. A. Keith.—p. 893.
Localization of Abdominal Pain. V. Z. Cope.—p. 895.
*Modern Cosmetic Preparations. R. M. B. MacKenna.—p. 899.
Ruptured Ovarian Pregnancy: Case. E. L. Graff.—p. 902.
Advantages of Portable Thermostat for Blood Transfusion. G. Shera. —p. 903.
Septicemia Due to Bacillus Fecalis-Alkaligenes. D. I. Gracey.—p. 904.
Possible Case of Psittacosis. A. V. Russell.—p. 905.
Twisted Ovarian Cyst in Child. R. C. B. MacRae.—p. 906.

Modern Cosmetic Preparations.—Various formulas for cold creams and vanishing creams are discussed by MacKenna. It is shown that these may have an irritant effect on the skin, which may in time lead to the production of rodent ulcers and epitheliomas, and that these applications are prolific originators of comedones, acne vulgaris and acne rosacea. The formulas of irritant applications ("wrinkle removers") have been studied, and their effect in the production of neoplasms of the skin is discussed. Formulas for skin foods and lotions are given, and a line of treatment for a skin ruined by the injudicious use of cosmetics is indicated. The hair dyes in common use are briefly enumerated, special reference being made to the paraphenylendiamine group of dyes. A brief account is given of the signs, symptoms and treatment of paraphenylendiamine dermatitis.

1: 937-986 (May 24) 1930

Blood Trail. J. Bland-Sutton.—p. 937.
Spontaneous Detachment of Retina. A. W. Ormond.—p. 940.
Some Principles in Modern Treatment of Rheumatic Diseases. W. S. C. Copeman.—p. 942.
*Epidemic Catarrhal Jaundice. W. N. Pickles.—p. 944.
*Treatment of Pulmonary Tuberculosis on Lines of Mineral Deficiency. K. Fraser.—p. 946.
*Aortic Stenosis: Case. W. H. Bennett.—p. 948.
*Value of Bromine Test for Diagnosis of Pregnancy. G. H. Dodds. —p. 948.
*Family Incidence of Juvenile Rheumatism. N. G. Hill and M. Allan. —p. 949.
Blood Picture in Measles. H. A. Lane.—p. 950.
Strangulated Hernia of Broad Ligament. S. Caplan.—p. 950.
Spontaneous Surgical Emphysema. F. B. Hobbs.—p. 950.

Epidemic Catarrhal Jaundice.—Pickles analyzes an outbreak of catarrhal jaundice. More than 250 cases have occurred among a population of only 5,700. The method of spread was respiratory. The incubation period varied from twenty-six to thirty-five days, and the period of infectivity was probably short. The condition was, on the whole, free from danger, and no fatal case occurred, but in some instances serious acute abdominal disease was simulated, and the invalidity in many was prolonged.

Treatment of Pulmonary Tuberculosis on Lines of Mineral Deficiency.—Fraser relates his experiences with the use of calcium and iodine in four cases. Three were early cases with positive sputum, but with limited lesions in the lungs; the fourth was an advanced case with extensive lesions in both lungs, including cavitation in one of them. This patient was included at the request of one of his colleagues, and against his own judgment. Two of the cases were markedly febrile; two were afebrile. The most striking result in each case has been the diminution in the number of tubercle bacilli present in the sputum. All four patients showed a rapid and marked increase in weight. The physical signs have improved concurrently with the fall in the sputum count and temperature, and the gain in weight. Each of the patients has shown marked improvement in general health.

Aortic Stenosis.—In the case reported by Bennett a rheumatic infection in childhood had caused changes in the valves —especially the aortic—which steadily progressed during forty-six years to calcification, and ended in ulcerative endocarditis with infarction of lung and kidneys. The association of auricular fibrillation with infective endocarditis was noteworthy.

Value of Bromine Test for Diagnosis of Pregnancy.—Dodds has carried out this test on 380 patients. The test was done on fresh urine specimens. It is apparent that the test is not pathognomonic of pregnancy. The error of 25.7 per cent among the antenatal cases makes the test of little, if any, value. The test was positive in two cases in which the fetus was known to have died from twenty-four to forty-eight hours before the test was carried out. The positive result in the case of hydatidiform mole agrees with the theory that the test is dependent on a hormone formed by active placenta. Finally, the error of 13.1 per cent in the nonpregnant group makes the test valueless in the diagnosis of pregnancy. The ten positive nonpregnant cases were: fibroid, retroverted nonpregnant uterus, cervicitis, prolapse, chronic pelvic peritonitis, menorrhagia, right-sided pain and chronic pyelitis.

Family Incidence of Juvenile Rheumatism.—Information has been collected by Hill and Allan from the parents of 400 of the rheumatic children relating to the incidence of rheumatic manifestations in their families. In not one of the large families—those with six children or more—was there a majority of rheumatic children; in many instances only one member of the family shows evidence of the disease. In the series were eight pairs of twins, and in not a single instance have both twins developed recognizable manifestations of rheumatism. A rather striking point is that in only six families do both father and mother give a history of juvenile rheumatism, and in only a comparatively small number of instances is there a history of rheumatism among both the father's and mother's relatives, a point of more significance when the size of many of their families is considered. There is, however, slight evidence in favor of the view that juvenile rheumatism occurs more frequently in certain families than in others.

Journal of Tropical Medicine & Hygiene, London

33: 117-132 (May 1) 1930

New Way in Cancer Research. J. A. Shaw-MacKenzie.—p. 117.
Identity of Bacillus Abortus with Bacillus Melitensis. C. A. Mallardo. —p. 125.
*Administration of Liver, Pancreas and Stomach Extracts in Sprue. A. Castellani.—p. 126.

Administration of Liver, Pancreas and Stomach Extracts in Sprue.—Castellani states that the liver treatment of sprue is an old one. It was the native routine method of treatment in Ceylon many years ago, long before liver was given in pernicious anemia. At the present time he uses liver in cases of sprue in the same manner as is given in pernicious anemia, usually extracts of liver. The results are not so brilliant as those experienced in pernicious anemia; it is, however, useful when the patient shows symptoms of severe anemia, as is so often the case. The liver may be given in conjunction with or after a period of milk diet, which still remains the best routine diet for most sprue patients. The administration of raw pancreas is useful in certain cases but, unfortunately, most patients greatly object to the taste and give up taking it after a time. Sweetbreads from lambs, sheep or calves are used. They must be absolutely fresh. The gland is minced in a clean bowl or similar receptacle or may be passed through a mincing machine; the stringy parts are removed. At first a teaspoonful and later a tablespoonful of the chopped mass, including the juice, is given once or twice a day; most patients prefer swallowing it with a little milk. Provided the gland is absolutely fresh, the taste is not nauseating. The action of pancreas tablets and capsules (whole substance) cannot be compared with that of fresh raw pancreas, but they seem to be useful. Two or more tablets are given three times daily.

In two recent cases of sprue of medium gravity with rather severe signs of anemia, Castellani has given the stomach extract. Both patients have rapidly and greatly improved, apparently more so than other cases of about the same gravity in which liver extract was given.

Archives des Maladies du Cœur, etc., Paris

23: 145-224 (March) 1930

Unusual Type of Adams-Stokes Syndrome not Due to Syphilis. Langeron and Bera.—p. 145.
*Acute Idiopathic Rheumatismal Myocarditis. G. Étienne.—p. 153.
Pernicious Anemia: Nine Cases. D. Pletnew.—p. 164.

Acute Idiopathic Rheumatismal Myocarditis.—Étienne reports the clinical histories of six patients with acute or hyperacute symptoms of myocarditis. Of these rheumatism had not been previously noted in one patient with mild symptoms one year after the myocarditis. The second patient had had rheumatism forty years previously; she subsequently developed a phlebitis, but recovery ensued and after medication with salicylic acid her temperature and heart condition remained satisfactory. Pain in the joints occurred in the third patient coincident with severe symptoms of thoracic constriction and tachycardia. Intravenous injections of salicylic acid preparations were given and the patient subsequently recovered. In two other patients only slight pain was noted in the joints coincident with severe myocarditis, which was complicated by a pleural and pulmonary involvement. In the sixth patient, acute rheumatism developed subsequent to a streptococcus sore throat. Her heart was in a bad condition similar to that occurring in acute pulmonary edema. A fixation abscess was produced, which was evacuated one week later. In spite of congestion of the lungs and the heart condition, the patient recovered after the formation of a small abscess on the thigh. The author points to the beneficial effect of salicylate preparations, which he advises in the treatment of such conditions together with the cautious use of heart stimulants.

Archives de Médecine des Enfants, Paris

33: 199-262 (April) 1930

*Ulcerous Intra-Uterine Disease (Congenital Formation of Ulcers). L. Ombrédanne and Lacassie.—p. 199.
Endocarditic Form of Still's Disease. R. Debré, R. Broca and M. Lamy.—p. 122.
Treatment of Infantile Atrophy ("Hypothrepsia"). N. J. Spyropoulos.—p. 223.
Acute Adenoiditis in Measles: Case. J. Caminis.—p. 231.

Ulcerous Intra-Uterine Disease (Congenital Formation of Ulcers).—Ombrédanne and Lacassie reject the theory of the mechanical origin of congenital lesions. They point out that, in syndactylia, ulcerations of the skin of the face or other parts of the body have been noted. Involvement of the skeleton occurs if this ulcerative disease develops before the forty-fifth day of fetal life leading to partial or total absence of a bone or to congenital pseudarthrosis. However, the disease may remain localized on the surface; its action is similar to injuries sustained through burning. The clinical history of an infant in whom an especially severe ulceration of the right hand and arm was noted at birth is described, and photographs of two other children with symptoms of the disease are reproduced.

Bull. et Mém. de la Soc. Méd. des Hôpitaux de Paris

(54): 527-576 (April 7) 1930

*Meningeal Spirochetosis Due to Infection While Bathing in River. J. Troisier, B. Erber and Monnerot-Dumaine.—p. 528.
Myotonic Dystrophy and Parathyroid Insufficiency. M. Faure-Beaulieu.—p. 534.
Curable States of Meningitis in Children. J. Comby.—p. 535.
Simple Meningitis Due to Virus of Poliomyelitis. A. Netter.—p. 537.
Gangrenous Abscess of Lung. Baumgartner and É. Bernard.—p. 539.
Bronchoscopy in Treatment of Lung Abscess. É. May and A. Soulas.—p. 543.
Immunization and Mechanisms of Immunity. A. Tzanck.—p. 561.
Pneumococcic Bronchopneumonia as Complication of Pregnancy Without Reactivation of Tuberculosis in Process of Cicatrization. G. Caussade and P. Rudaux.—p. 569.

Meningeal Spirochetosis Due to Infection While Bathing in River.—The water of the Seine contained *Spirochaeta icterohaemorrhagica*, which caused the infection in Troisier et al.'s patient, a man, aged 20, in whom symptoms of nausea, vomiting, lumbar pain, headaches, epistaxis and diarrhea coincident with splenomegaly occurred subsequent to bathing in the river. His temperature was considerably increased, and two days after the onset he entered the hospital. Meningeal symptoms were noted, but with the exception of the slightly enlarged spleen the examination did not show his organs to be in a pathologic condition. Examination of the blood revealed the spirochetosis. The patient rapidly improved and asked to be discharged from the hospital, although the agglutination tests remained positive for about two months more. However, six weeks after the infection all neurologic symptoms had disappeared spontaneously.

Bulletins et Mém. de la Soc. Nat. de Chirurgie, Paris

56: 331-364 (March 15) 1930. Partial Index

Acute Herniary Appendicitis: Two Cases. Duval.—p. 332.
*Congenital Malformations of Duodenum and Colon Resulting in Severe Digestive Disorders. Peigneaux and H. Fruchaud.—p. 335.
Treatment of Staphylococcic Infections by Bacteriophage and Staphylococcic Mycolysines. A. Gratia.—p. 344.
On Bacteriophage. Sauvé.—p. 348.
Regional Vaccination at Portal of Entry in Treatment of Articular Complications of Gonorrhea. A. Basset and P. Poincloux.—p. 354.

Congenital Malformations of Duodenum and Colon Resulting in Severe Digestive Disorders.—Peigneaux and Fruchaud's patient, aged 15, had had delicate health and had suffered from intestinal disorders from infancy. Removal of greatly enlarged tonsils had improved her general condition for a short period; she became anemic, however, and constipation and headaches recurred. A severe attack of pain with bilious vomiting was noted coincident with a slight increase in temperature. Roentgen examination showed obscure intestinal conditions, and operation was done the next day which disclosed the anomalies. The duodenum was liberated from multiple adhesions, and gastrojejunostomy and colocolostomy were done. The patient soon had a normal digestion, and cicatrization was rapid. Three weeks later, colopexia of the cecum and colon to the tendon of the psoas muscle was done. Recovery was without complication, and roentgen examination about three months later disclosed that the size of the stomach had diminished. Evacuation was rapid through the opening of the gastrojejunostomy.

Paris Médical

1: 331-346 (April 12) 1930

*"Hippocratic Succussion" of Heart Rhythm. J. Dumont and P. Schmite.—p. 331.
*Traumatic Polyneuritis and Neurosis After Lightning Stroke. C. I. Urechia.—p. 333.
Spontaneous Pneumothorax with Fistula as Outlet. C. Apostolides and D. Hadjissarantos.—p. 338.
Abdominal Bandages for Day and Night Wear. G. Sardou.—p. 340.
Clinical Value of Widal's Leukocyte Reaction in Diseases of Liver. O. K. Zakarowa-Sidlaréwskaia.—p. 342.
Psoriasis: Treatment by Coal Tar and Actinotherapy. E. Daubresse-Morelle.—p. 344.

"Hippocratic Succussion" of Heart Rhythm.—In a patient with pulmonary tuberculosis Dumont and Schmite observed this sound, which was in all characteristics similar to the bruit de moulin. The patient had a pyopneumothorax on the right side and subsequently died. Necropsy disclosed that his heart was in good condition and that cardiac or pericardiac lesions could not be incriminated but that the origin of this variety of bruit de moulin was the pleural condition.

Traumatic Polyneuritis and Neurosis After Lightning Stroke.—Urechia reviews the literature on the subject and reports the clinical histories of two patients in whom various nervous disorders with partial paralysis developed as a result of their having been struck by lightning. In one patient the pain and paralysis were gradually relieved within three months. The other patient had entered the clinic only twenty-four days after the accident. He had severe pain, partial paralysis with tactile disturbances, headaches and a feeling of anxiety. There was likewise a marked decrease in the hearing on the left side which persisted, although the other symptoms had gradually disappeared six months later. A third man, who was struck by lightning the same day, died after having fractured his skull in a fall from a telegraph pole.

Klinische Wochenschrift, Berlin

9: 625-672 (April 5) 1930

Relation Between Hypophysis and Growth. J. Bauer.—p. 625.
Focal Infection and Tonsillectomy. P. Morawitz and R. Schoen.—p. 629.
Circulatory Disturbances in Diseased Kidney. H. Eppinger, D. Laszlo, H. Rein and A. Schürmeyer.—p. 633.
Iodine Therapy in Exophthalmic Goiter. H. Zondek.—p. 637.
Differentiation of Thyroxin Iodine from Inorganic Iodine in Membranes of Living Organism. W. Lipschitz.—p. 642.
Method for Objective Evaluation of Auscultation and of Percussion. A. Pierach.—p. 645.
Determination of Venous Carbon Dioxide Pressure. W. Ewig and K. Hinsberg.—p. 647.
Various Types of Pneumonia: Their Treatment with Serum. H. Kähler.—p. 650.
*Treatment of Pernicious Anemia with Desiccated Hog Stomach. G. Rosenow.—p. 652.

Treatment of Pernicious Anemia with Desiccated Hog Stomach.—Rosenow points out that the American author Castle first advanced the theory that achylia not only is a symptom of pernicious anemia but also has a causal relation to the disease. He made tests which corroborated this statement. Other American authors continued his investigations and found that desiccated hog stomach had a therapeutic effect similar to that of liver. Encouraged by these reports, the author employed desiccated hog stomach in the treatment of pernicious anemia and in secondary anemia. He reports two cases of pernicious anemia. The patients were given daily from 20 to 30 Gm. of desiccated stomach powder in water, in broth or in milk. Thirty grams of the dry substance is equal to about 100 Gm. of the fresh organ. In both patients the general condition improved, urobilinuria disappeared and the blood picture became normal. However, the achylia and the spinal symptoms were not influenced. In one instance the therapeutic effect of the stomach powder was increased by the addition of small quantities of viosterol. In the cases of secondary anemia the desiccated hog stomach was not effective. The author mentions other German authors who report favorably about desiccated hog stomach in the treatment of pernicious anemia. This form of treatment has certain advantages over liver therapy. It is less expensive than liver extracts and the quantities required are smaller. The author also emphasizes that this new therapy is of great significance for the investigations concerning the pathogenesis of pernicious anemia.

Medizinische Klinik, Berlin

26: 491-534 (April 4) 1930

Pathogenesis and Clinical Aspects of Pain in Various Forms of Angina Pectoris. R. Schmidt.—p. 491. C'td.
Relation Between Duodenal Diverticula and Diseases of Liver and of Biliary Tract. W. Stepp and K. Gutzeit.—p. 495.
Treatment of Diphtheria with Diphtheria Serum. T. Brugsch and W. Grunke.—p. 497.
*Treatment of Intussusception During Childhood: Significance of Early Diagnosis. H. Kleinschmidt.—p. 498.
*Nature and Treatment of Disorders in Nurslings of Women Addicted to Morphine. L. Langstein.—p. 500.
Treatment of So-Called Rheumatism During Childhood. Von Mettenheim.—p. 501.
*Discussion on Whether the Fourth, Fifth and Sixth Diseases are Disease Entities. H. Rietschel.—p. 504.
Value of Various Carbohydrate Foods in Infant Feeding. W. Stoeltzner.—p. 507.
Increase in Tolerance in Patients with Diabetes Mellitus. K. Stejskal.—p. 508.
Antirachitic Effect of Irradiated Milk. H. Brühl.—p. 509.
Peroral Administration of Mixture of Insulin and Sodium Desoxycholate. D. Kwilecki and K. Silberstein.—p. 513.
Hemoglobin Resistance in Monkeys. H. Bischoff.—p. 513.
Cause and Treatment of Seasickness. H. Seel.—p. 514.
Cod Liver Oil in Treatment of Syphilitic Children. E. Kobligk.—p. 516.

Treatment of Intussusception During Childhood: Significance of Early Diagnosis.—Kleinschmidt asserts that there are still differing opinions as to whether surgical or nonsurgical treatment is the better method in cases of intestinal invagination. Several Danish authors recommend taxis as the method of choice. The author describes the technic of this treatment. He found that the method is effective only if the treatment is done within the first twenty-four or thirty-six hours. On the other hand, he has seen good results likewise from surgical treatment. When operative therapy was resorted to, the outcome seemed also to be largely dependent on an early diagnosis. Of the twelve cases observed by the author, six were correctly diagnosed and treated within the first thirty-six hours. Some received surgical and others nonsurgical treatment, and all of these recovered. Of the other six patients who received treatment between thirty-six and ninety-six hours after the appearance of the first symptoms, five died. The author cites other authorities who stress the great significance of early diagnosis. However, since intestinal invagination is a comparatively rare occurrence, it is frequently not recognized by the average practitioner. As the most prominent symptoms he names the sudden onset out of a state of complete health, the condition of collapse which follows soon, vomiting, the frequent attacks of pain, and the discharge of mucus and blood. Careful examination of the abdomen reveals the invagination tumor. To differentiate the condition from intestinal catarrh or from cholera morbus, it should be considered that in the latter disorders there are liquid fecal discharges, whereas in cases of intestinal invagination the evacuations are at first of normal consistency and later constipation develops. On account of the evacuation of blood and mucus, intussusception might be mistaken for a dysenteric disorder. However, a dysenteric disturbance usually has not such a sudden onset, nor does it influence the general condition to the same extent. In regard to subacute or chronic intestinal invagination, the author states that this condition usually occurs not in nurslings but in older children. He observed three cases of chronic intussusception. The symptomatology was about the same as in acute cases. Surgical treatment was instituted and two children recovered. In the conclusion the author stresses again the great significance of early diagnosis.

Nature and Treatment of Disorders in Nurslings of Women Addicted to Morphine.—Langstein first reviews two cases from the literature in which the infants of women addicted to morphine were healthy with the exception of a temporary nervousness. He cites another author who observed arrhythmia of the fetal pulse, spasm-like movement of the fetus, and stupor with subsequent convulsions. Stillbirth resulted in some instances, and in other cases the infants were extremely weak. The author reports his observations in four cases. Two infants died within the first few months because proper nutrition was impossible on account of severe functional disturbances in the alimentary tract. They were extremely restless, vomited all food, and died in a condition of dystrophy. A third infant showed similar symptoms. It completed the first year, but it became blind and died in a condition of atrophy. The fourth case is reported in detail. The birth was spontaneous, but the infant was blue. Breast feeding proved unsuccessful. The child was extremely nervous and cried almost constantly. Feeding with human milk and later with buttermilk was of no avail, because of the vomiting. The author decreased the quantity of food. For a while the child received only tea; then small quantities of human milk were given. When more food was given again, a total collapse followed and the child lost in weight. Again the quantity of food was reduced and with the aid of dextrose infusions and the administration of caffeine the infant gradually recovered. In the conclusion the author states that the nervousness of infants of morphine addicts requires clinical observation and treatment, for only with the most careful attention to all the details of nutrition will it be possible to overcome the severe functional disorders of the alimentary tract. A form of starvation cure, namely, a prolonged nutrition with smallest amounts of human milk, will be helpful in most cases. To overcome the restlessness, which often weakens the heart, medication with very small quantities of opium may be necessary.

Are the Fourth, Fifth and Sixth Diseases Disease Entities?—After discussing the various forms of exanthematous diseases, Rietschel comes to the conclusion that the condition which is usually designated as fourth disease is generally a mild form of scarlet fever or a form of rubella. He thinks that there does not exist sufficient evidence to characterize the so-called fourth disease as a disease entity. He also thinks that, if there is no so-called fourth disease, the terms fifth and sixth disease should likewise disappear and that the fifth disease should be designated as erythema infectiosum and the sixth as exanthema subitum.

Münchener medizinische Wochenschrift, Munich

77: 569-616 (April 4) 1930

Contributions to Medical Science from Surgical Clinic of University of Berlin. A. Bier.—p. 569.
*Cure of Aplastic Anemia. Birk.—p. 575.
Pharmacology of Therapy with Solution of Phosphorus in Cod Liver Oil. W. Straub.—p. 577.
Bilateral Traumatic Dislocation of Hip Joint. C. Ach.—p. 579.
Sequestrating Inflammation of Tooth Pulp Causing Premature Eruption of Teeth. Mahlo.—p. 579.
Bacterial Content of Commercial Sterile Catgut. M. Knorr.—p. 581.
*New Apparatus for Transfusion of Blood. O. Neubauer and H. Lampert.—p. 582.
*Determination of Coagulation Time. H. Lampert.—p. 586.
*Method for Diagnosis of Adhesive Pericarditis. M. Hochrein.—p. 588.
Loud Speaker in Clinical Instruction: Apparatus for Making Auscultation Phenomena Audible to Students. G. Landes.—p. 591.
Practical Significance of Investigations on Circulation. S. Lauter. —p. 593. C'en.
Clinical Experiences with Two New Belladonna Preparations. L. Blau. —p. 596.

Cure of Aplastic Anemia.—Birk reports the case of a boy, aged 1 year. During the first year the development had been normal. Then the child became pale and anemic. The physician prescribed an iron preparation, but when the number of erythrocytes decreased steadily the child was brought to the hospital. The author reports the results of the examination. On the day after the arrival at the hospital the number of erythrocytes had decreased to less than one million and there were no signs of regeneration. The case was diagnosed as aplastic anemia and the prognosis seemed unfavorable. Nevertheless several blood transfusions were made and it was hoped that by means of the usual treatment the regeneration could be stimulated. However, even after this procedure had been continued for several months there were no indications of improvement. The author reasoned that, since the cause of aplastic anemia is not known, a causal therapy cannot be attempted. Nevertheless a spontaneous regeneration might be possible, if with the aid of blood transfusions the organism can be kept alive for sufficient length of time. In accordance with this theory the author instituted treatment. The boy remained in the hospital for more than a year. In the course of nine months, forty blood transfusions were made; namely, twenty-nine intravenous, six intraperitoneal and five intramuscular injections. In all 3,133 cc. of blood was administered. Gradually the number of erythrocytes and the hemoglobin content increased and the condition of the blood became normal again. Because the child required only comparatively small quantities at each injection, two donors were sufficient. In an adult person who would need large quantities of blood, this procedure seems less practical.

New Apparatus for Transfusion of Blood.—Neubauer and Lampert first evaluate various methods and apparatus for blood transfusion and discuss the shortcomings of the different methods. The main difficulty in blood transfusion is that the blood has the tendency to coagulate as soon as it comes in contact with surfaces other than those of blood vessels. The property of certain substances, such as glass, for instance, to hasten the coagulation is designated by the authors as "thrombagoge." This thrombagoge quality is more pronounced in some materials than in others. The authors tested the adhesiveness of water and of aqueous solutions to several substances and compared the results with the thrombagoge quality of the same substances. They come to the conclusion that the thrombagoge quality of a material is about the same as the adhesiveness of water or other fluids to it. In amber the authors discovered a material to which liquids have only a slight adhesiveness and which is not thrombagoge. But since this substance is too expensive for the construction of large apparatus, they constructed one from an artificially produced amber. This material is likewise not thrombagoge. The authors then describe the technic of blood transfusion and emphasize the advantages of this apparatus. The preparations and technic are simple, so that in an emergency a transfusion can be done by two persons. The donor and the patients are completely separated; if desired they may be in different rooms, and thus the donor is protected against the possibility of an infection or of a psychic shock. The apparatus is sterilized in boiling water. A tourniquet is put round the arm of the donor, and the cannula is inserted into the vein. Then the tourniquet is removed and the blood is collected in a cup made out of the amber-like material. When the cup has filled it is emptied into the infusion tube, the tap of which is closed. Then the tap is opened so that all the air may escape. A tourniquet is put round the arm of the patient, and a curved cannula is inserted into the vein; then the tourniquet is removed, the infusion tube is attached to the cannula, the tap is opened, and with slight pressure on the bulb the blood flows into the vein of the patient. After more blood has been withdrawn from the donor, the tube is refilled and the infusion continued. Each time after the cup is emptied, it is rinsed with physiologic solution of sodium chloride. The authors point out that this method preserves the veins of both the donor and the receiver. Another advantage is that the transfusion may be interrupted at any time, and if large quantities of blood are required the blood may be withdrawn from several donors. This method also permits the simultaneous injection of physiologic solutions, such as dextrose solution, and the addition of medicaments.

Determination of Coagulation Time.—Lampert describes a method for the determination of the coagulation time. He employs for his test containers made of the amber-like material, the minimal thrombagoge action of which he discusses in the preceding article. This amber-like material is free from alkali and the adhesiveness of fluid to it is minimal. In containers of this material, the coagulation of the blood is delayed. The container with the blood is kept at the physiologic temperature of 98.6 F. Under these conditions the normal coagulation time is from twenty to twenty-five minutes.

Method for Diagnosis of Adhesive Pericarditis.—Hochrein directs attention to the fact that adhesive pericarditis is only rarely recognized as such. He describes the pneumotachograph, an apparatus that registers the velocity of respiration. With the aid of this apparatus it was possible to detect a peculiar respiratory curve in patients who showed the clinical aspects of adhesive pericarditis and in whom later the necropsy verified the diagnosis. In a number of cases in which the pneumotachograph recorded similar curves, the author made the diagnosis of adhesive pericarditis, although there were no clinical signs of the disease. Subsequent postmortem examination of some of the patients proved that the diagnosis had been correct. Fluctuations in the respiration curves were observed also in cases of aortic aneurysm and in mediastinitis. However, in normal persons and in patients with various circulatory disorders or with pulsating pulmonary tumors the pneumotachogram represents the respiratory pause as a straight line. The mechanism of the respiratory fluctuations in cases of aortic aneurysm and in mediastinitis is not yet clear. But in these conditions the pneumotachogram shows different curves than in adhesive pericarditis. Although pneumotachography has been employed only in a limited number of cases, the author thinks that this method is a valuable aid in the diagnosis of intrathoracic disorders. Pneumotachography in combination with electrocardiography is employed in the general examination of the circulation.

Wiener klinische Wochenschrift, Vienna

43: 417-448 (April 3) 1930. Partial Index

*New Method of Hearing. S. Jellinek and T. Scheiber.—p. 417.
Treatment of Skin Diseases with Grenz Rays (Bucky's Border Rays). H. Fuhs.—p. 418.
Correlations Between Allergic Diseases and Internal Secretions. K. Hajós.—p. 421.
*Etiology of Lead Poisoning. M. Nedok.—p. 427.
Symptomatology of Obturator Hernia. B. Kaufmann.—p. 429.
Causes and Symptoms of Eunuchoidism. F. Altmann.—p. 431.
Uterine Myomas and Pregnancy. H. Katz.—431.

New Method of Hearing.—Jellinek and Scheiber point out that the physical foundation of hearing is that a vibrating medium such as air, wood or water transmits sound waves as mechanical motion to the internal ear. With the aid of an apparatus constructed by the authors the auditory nervous apparatus receives not a sound wave, a mechanical vibration, but a vibrating electric current. The ear is electrified just as a muscle or a nerve is electrified during electrotherapy, the

auditory apparatus is oscillated by electric vibrations, and hearing results. The method is as follows: Two persons, who are well insulated against the ground, touch, each with one hand, the terminals of the apparatus and, by bringing their heads in contact, they close the current through their bodies. At the same moment each person perceives in the other's eye a flashing, that is, a light perception, and differential hearing is possible. Both persons can distinguish the voice or the sounds of a musical instrument. In another test the hearing was facilitated only for one person, the one who wished to hear touching the head of the other person not with his own head but rather with his hand. The one person had the same auditory perception as in the first experiment. It was also found that, when the ears had been closed with cotton plugs, the clearness of the hearing was not influenced. The authors assert that, in spite of the fact that this method of hearing can easily be demonstrated, a thorough explanation of all the details of the phenomenon is still difficult.

Etiology of Lead Poisoning.—Nedok reports his observations on three patients who showed the clinical aspects of lead poisoning. The diagnosis of lead poisoning was verified by the examination of the blood, which showed a reduced hemoglobin content and granular basophilic degeneration of the erythrocytes. The anamnesis revealed that all three of the patients were consuming daily large quantities of new wine that had been drained from the wine press through lead pipes. Samples of the new wine were examined and it was found that they contained lead. After the patients had been deprived of this new wine for some time, the symptoms of lead poisoning gradually disappeared. Therefore it cannot be doubted that the lead absorbed by the new wine while passing through the lead pipes had caused the lead poisoning in the three patients.

Zentralblatt für Chirurgie, Leipzig

57: 897-960 (April 12) 1930

Variability of Effect of Injuries on Bones as Evidenced by Disturbances of Epiphyses After Freezing and in Hemophilia. W. Löhr.—p. 898.
Luxation of Tarsal Scaphoid. W. Kreiner.—p. 910.
*Significance of Bone Atrophy in Tuberculosis of Bones and Joints. M. H. P. P. van Haeff.—p. 912.
Biology of a Scar. S. Frey.—p. 920.
*Pathogenesis of Nongonorrheal Epididymitis. H. Puhl.—p. 922.
Madelung's Disease or Madelung's Deformity? A. Zeitlin.—p. 929.
*Prevention of Boiler Scale in Instrument Sterilizers by Means of Luffa Sponges. G. Eichelter.—p. 933.
*Injection Treatment of Varices: Advantages, Disadvantages and Dangers. E. Domanig.—p. 935.
Gangrene of Fingers After Operation for Dupuytren's Contracture. E. Roedelius.—p. 936.

Significance of Bone Atrophy in Bone and Joint Tuberculosis.—According to van Haeff, the bone atrophy accompanying tuberculosis is an evidence of a local reaction against the disease and not the result of the disease. The greater the degree of atrophy, the greater the chances of success in overcoming the disease. The blood supply is increased and recalcification occurs in greater degree. Hence, this cycle is seen more often in the young than in the adult whose bones are already definitely formed or fully grown, with a considerably lessened tendency toward restitution, which becomes greater with advancing years. The healing of a fracture depicts the march of events in this respect. Therefore, in treating tuberculosis of bones and joints, stimulation of repair results from resection, implantation of bone chips and exposure to the ultraviolet ray. The author feels that spleen therapy deserves further trial.

Pathogenesis of Nongonorrheal Epididymitis.—Puhl directs attention to the fact that the infection in these cases frequently arises from a metastatic infection of the prostate which took its origin elsewhere, not infrequently from a pulmonary infection. In one case cited, *Bacillus mucosus-capsulatus* was the cause of the pulmonary infection. He advises that in every case of infection of the epididymis a careful roentgen examination of the prostate and a complete urethroscopy be made. The bearing of the results of such examination on treatment is evident.

Use of Luffa Sponges in Instrument Sterilizers.—Eichelter has given up putting soda into the water used to sterilize instruments. He now places an ordinary sized luffa sponge in the bottom of the sterilizer, which is filled up with clear water. He says that the sponge takes up all the impurities in the water; that the instruments remain bright and free from any and all accretions; that rust spots are never seen, even when the plating on the instrument is defective. It has all the advantages of soda and none of its disadvantages. It is not expensive and requires renewal about once a month.

Injection Treatment of Varicose Veins.—Domanig uses a 66 per cent sugar solution. For small and medium-sized varices, he advocates ambulatory treatment. For the larger varices he prefers surgical extirpation combined with injections. He has treated more than a hundred patients and, except for four thromboses, has not seen any bad results, especially infarcts or necroses of the tissues surrounding the point of injection, even when the solution was injected into them and not into the vein.

Norsk Magasin for Lægevidenskapen, Oslo

91: 369-472 (April) 1930

Relations of Heredity in Human Blood Types ("Blood Groups") with Especial Regard to Possibility of Two New Types Called A' and A'B. O. Thomsen.—p. 369.
Poisoning with Ethylene Glycol: Acute Uremia with Recovery After Renal Decapsulation: Two Cases. A. Brekke.—p. 381.
Hormonal Regulation of Fluids of Organism: Review. L. T. Poulsson.—p. 389.
*Peculiar Case of Auricular Flutter. C. Müller.—p. 402.
Statistical Evaluation of J. Heimbeck's B C G Vaccinations of Ullevål Nurses in Training. H. Westergaard.—p. 414.
*Postvaccinal Conditions of Central Nervous System and Possible Causes. Y. Ustvedt.—p. 417.
*Impetigo Herpetiformis. Per L. Rotnes.—p. 432.

Peculiar Case of Auricular Flutter.—In Müller's patient, aged 53, with auricular flutter diagnosed in 1923, confirmed five years later and on succeeding control examinations, and regarded as the so-called permanent flutter, spontaneous restoration of normal rhythm, unobserved by the patient, had occurred four months after the last examination. The case is of particular interest because of the remarkably slight inconvenience due to the flutter, the patient having experienced no trouble in his active participation in outdoor sports during this period, and because of the uncertainty as to the duration of the flutter.

Postvaccinal Conditions of Central Nervous System and Possible Causes.—Ustvedt has since 1922 observed eleven postvaccinal cases, seven regarded as meningitis and four as encephalitis, three of the latter being fatal. In his opinion, vaccination played an important part in the development of these cerebral conditions. He is inclined to ascribe the postvaccinal encephalitis to a poliomyelitis infection. If there is poliomyelitis in a given district, postponement of vaccination in that district is advised.

Impetigo Herpetiformis.—In the first case of Rotnes a woman, aged 61, presented the characteristic clinical picture of impetigo herpetiformis, with sterile pustules; the course was protracted and accompanied by a chronic pelvic peritonitis. In the second patient, a woman, aged 31, the typical exanthem began in the eighth month of pregnancy; the pustules and blood were sterile. The etiologic factors could not be determined. The general condition became worse and, three months after the onset of the disorder, blood transfusion was done; steady improvement followed, with recovery.

Ugeskrift for Læger, Copenhagen

92: 293-318 (March 27) 1930

Indications for Roentgen Treatment in Certain Groups of Conditions. C. I. Baastrup.—p. 293.
*Significance of Insulin in Treatment of Diabetic Persons with Surgical Complications. C. Holten.—p. 300.
Blood Sedimentation Reaction in Climacteric Patients. O. Bach.—p. 305.

Significance of Insulin in Treatment of Diabetic Persons with Surgical Complications.—Holten believes that the use of insulin allows the same surgical treatment to be given diabetic persons as other patients and that the indications can be fixed fairly independently of the diabetes as such. The frequently complicating arteriosclerosis requires the same consideration as arteriosclerosis in other patients.